

# Prevention of fires and other incidents

## Report and recommendations



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Report and recommendations

A project developed under the Community action programme in the field of civil protection.

The report reflects the views from the project. The Commission is not liable for any use that may be made of the information contained therein.

# Introduction to the reader

The present report is the result of a project developed by the Swedish Rescue Services Agency and co financed by the European Commission, Civil Protection Unit under the Community action programme in the field of civil protection (2000-2004)

Fire expert from national authorities of 13 Member States and EEA-countries compiled for the first time the present comprehensive description of fire safety on the basis of a questionnaire and interviews issued in 2003. The report is not only a valuable information source for benchmarking, but is also identifies trends and inspires to new research and development projects.

Prevention of other incidents than fires is not yet so common within fire services. It is covered by the so-called “incident prevention”.

The report starts with a summary and six recommendations related to several major issues. Each of these issues is presented by general findings resulting from the answers and the results of a workshop hold in the context of the project. This part of the report is the most important, since it provides the motives for the conclusions and recommendations.

It is followed by a compilation of answers to additional questions, which are, for the reader's convenience, supported by general findings drafted by the project leader. The answers from the different countries have been placed under headlines. All countries have not answered all questions.

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# 1. Summary and recommendations

From the answers and the interviews it was found that high level and strategic questions should be developed in the project. Draft principles and guidelines could be suggested on such questions and has been discussed and prepared by the core group.

Themes that included strategic topics were chosen:

- National goals in fire prevention
- Community fire safety programs
- Basic facts in statistics and experiences
- Annual fire status report
- Other incidents – fire brigade involvement
- A working European network among national fire authorities.

The complexity is obvious with topics that are overlapping. It forms a whole and need to be addressed as such. Many similarities are found when you get close to the fire problem. The big questions are the same but best practise and campaigns are different. The different ways to organise for fire safety reflect the national structure from parliament to citizens and will be presented in the report.

Fire safety has been on the national agendas for hundreds of years. Experiences from real fires have been the most important base to improve fire safety. There may be some new way to complement the traditional. From the project we hope that the best practice found and described here can give a platform for improvements and save money and lives. It will also of benefit for the firemen's safety.

Fire safety is one of several accident areas. The importance, both singled out and in connection with other areas are not fully understood. The importance also differs between nations. The number of fire deaths can be estimated but not all economic losses or costs for fire safety. All countries face different problems and have their own priorities within fire safety and among several accident areas.

Fire Safety is the competence of Member States and the role of the EU is defined in the terms, "the community shall take action in the field of...civil protection...". Therefore it is hard to handle "fire safety" at a EU level. The EU can deal with prevention but not propose legislation. The aim can then be to find best practise at the EU level but not to harmonize legislation. A new convention will allow some further actions.



## Guidance and recommendation

For those countries that like to improve fire safety there is an obvious need for **national fire safety goals**<sup>1</sup>. They are developed in cooperation with all concerned stakeholders who are given defined responsibilities. Indicators are used to explain and understand the results. Such measurements provide evaluation of fire preventive activities and the outcome. The process in which you develop such goals has been found to be an important learning activity for all involved. The goals and the commitments are normally made public. National goals are also necessary if there in the future will be some European goals.

So-called **Community fire safety programmes**<sup>2</sup>, at both a national and a local level, are adapted around Europe. They involve all stakeholders and the responsibilities are defined along the safety chain – from authorities/organisations to the potential victims. Target groups are identified and different groups need specific treatment. Such programs include besides legislation and techniques also actions such as information, education and exercise. Owners of buildings and industry get information and education but are also faced by inspections and legal pressure. Other groups are only reached by information and education. The results are measured and compared with national goals. The programs are communicated and the development gives a better understanding of the complex problems and the need for a broad engagement.

Fire safety programmes can be used to present what values are achieved from money spent on fire safety and how it is balanced between prevention activities, preparedness and response recourses. In several countries there is a move, within the fire services, into more preventive interests. All kind of local bodies are involved and it is an advantage if the fire brigade take the lead. The introduction of such programs cannot rely only on voluntary actions. Therefore it may be a need for legal or other governmental pressure to support such programmes.

**Statistics and facts around fires** are essential for all nations. Fire brigade statistics are only one input besides many other sources such as data from insurance companies, facts on populations and buildings. Fire investigations programs can provide important details that are essential to suggest improvements for example on products. Statistics need to be of high quality and well defined. In many cases there is good knowledge about response actions but less on causes, problems and losses in deaths and economy terms. More can be done in most nations to find effects, to identify and declare trends. There is also a need to better understand the differences when benchmarking is performed within and between countries.

Some facts and statistics can be used by the Commission to give an overview of the fire safety problems in Europe. National systems will be the necessary base. All such figures shall be clearly defined and there are concerns with the present international fire statistics. More efforts can be done, by support from the Commission, to develop better basic statistics to get a better understanding and ways to address fire safety.

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<sup>1</sup> Set by the government or governmental agencies

<sup>2</sup> "Fire safety" is described by the UK model.

**Annual sharing of information between nations** is a way to learn and exchange knowledge. Besides national statistics you need information on trends, problems, best practice, good examples and about new or planned legislation. The sharing of such knowledge can start with small ambitions and be built step by step. Any written information shall be simpler than the questionnaire in this project. A network is one way to share information.

Fire services have knowledge that can be of good use in **general incident prevention**. The experiences from response actions can be of value to prevent other day-to-day accidents. Some groups would benefit of a close cooperation with the local fire brigades. There are also good reasons for central agencies to cooperate in matter concerning environmental and consumer topics and injury prevention. A move into such actions is found in some nations. Since this can cost money for the fire services some legislative background can be necessary. This broadening of interests may also be a way to get better value for the money spent on the fire services.

There is no **network among national fire safety authorities**. Such networks are an important part of the European co-operation in other areas and there are several groups with fire prevention on the agenda working in Europe. Many of EU policy areas involve pieces of fire safety and fire prevention. Fire safety is a horizontal question and has to be handles and understood by many different agencies and units. Some of the questions are already handled in close European cooperation, for example matters concerning the Construction Product Directive, standard fire testing methods for furniture, information to the public and prevention of forest fires. But fire safety includes many elements that interact and are handled as a whole in the countries. They can deal with most problems but some topics have to be handled on EU and other international levels. A proposal to start a network has been supported by all participant countries. A voluntary network can start with support, in words, from the Commission. Sweden offered to continue the development based on the letter that the core group sent to the Commission in May 2003. Preliminary ideas and proposals are presented in this report



## Recommendations from the project

- National fire safety goals are recommended. The goals shall be measurable. Involve all stakeholders. Recommend elaborated indicators.
- Community fire safety programs are recommended at national and local levels. The responsibilities shall be distributed among stakeholders and include, besides legislation and techniques, information, education and exercises. The fire services are recommended to take the local lead. They are recommended a shift of concentration on intervention to take a bigger picture into account. National agencies are recommended to support such actions.
- National systems to collect facts are recommended. Such systems need more emphasises on fire prevention and fire safety activities. Systems to collect and disseminate facts from fire investigations are recommended as a useful complement to statistics. Some of these facts need to be collected and presented by the Commission. More work on this topic is suggested.
- Improved sharing of information among nations (statistics, facts and other information). Recommend starting this with smaller ambitions than the present enquiry. It can be done through a network and meetings. Recommend some EU guidance on the importance.
- A use of experiences from response actions to prevent different kind of day-to-day accidents is recommended. Moves into that direction are recommended.
- A start of a voluntary network among national agencies is recommended. The EU Civil Protection Unit is asked to support a network by words.

## 2. Background and method

In April 1999 the first European Fire Safety Workshop was held in Chester. The report from that meeting contains a lot of proposals on how to achieve a safer environment for all European citizens by reducing the risk of fire. The participants agreed that the fire safety issues are the same in all Member States, but the political and legislative requirements, the professional structures and risk assessment are different.

In 2001 Swedish Rescue Services Agency was asked to continue to work with fire safety in a new project connected to the major project “Prevention of national and technological disasters” then lead by Finland. EU Directorate General Environment, (Civil Protection and Environments Accidents Unit) called for proposals in early 2002.

A proposal was made for a project that intended to contribute towards the prevention of risk from fires and other incidents, and to limit their effects. It should involve collating experiences, facts and other knowledge in the field of fire prevention. The aim of a workshop was to be part of development of European policies in fire prevention. The major project should concentrate on the development of principles and guidelines. Another aim was to create a major network of competent authorities for fire prevention and other incidents. (Forest fires and public information are not included)<sup>3</sup>.

The proposal was accepted and the project started in December 2002 with Björn Albinson as project leader. Questions and interviews were made from February till September 2003. A core group was formed and one workshop was arranged in November 2003. This final report was planned for February 2004.

Expected results from the project:

- A base for the establishment of common objectives and guidelines for European fire safety in certain areas.
- Good examples and descriptions that will make it easier for national authorities to co-operate. The distributed results will encourage contacts and improve co-operation
- Start of a “Community Fire Prevention Network” that can put fire safety topics forward and a place for expert advice within the Commission. It can also be a way to better integrate fire safety in new areas. Such a network can provide fast common reactions to negative trends and strengthen the co-operation.
- In addition to fire precautions and regulations for buildings the need for more efforts connected with fire safety levels on products and the factor of human behaviour will be more visible.
- Suggestions for studies in more depth of specific areas

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<sup>3</sup> From the Call for proposals.

## Method

To secure the data, questionnaires and interviews were estimated to be the most appropriate method to capture the considerable diversities in approach. We used open questions to find present and upcoming problems. More detailed questions were used in certain areas like national statistics, state of supervision etc. This first stage was the inventory and was done by two contracted Swedish fire officers (Max Ekberg, Malmö Fire Brigade and Per-Erik Ebbeståhl from Greater Gothenburg fire and rescue services.)

A core group was formed with participation from Ireland, Austria, Norway, United Kingdom, Finland and the Commission. The group coordinated the different activities and gave guidance in the management of the project and assisted in defining the objectives and to implement the long-term orientation of the project. The Core Group had meetings in March and September 2003.

After examining the answers the Core Group could extract some topics suitable for common principles and guidelines to be discussed at the workshop. The workshop with national governmental experts from 13 countries and the Commission used a document with answers from eleven countries. The delegates considered the outcome of the comparative study discussed recommendations, suggested areas for further work and expressed opinions on the aims of a proposed network.

The workshop<sup>4</sup> accepted the recommendations as joint conclusions that also include the views from the Core Group and the project leader.

### Participating countries:

Austria, Belgium, Denmark, Finland, Germany, Ireland, Iceland, Italy, Norway, Portugal, Sweden, The Netherlands, UK. Greece participated with an answer.

### Core group during the project

Frank Peter (Austria), Kirsi Rajaniemi (Finland), Pat Fleming (Ireland), Helge Stamnes (Norway) and David Peace (UK)

### European Commission

Mr Ernst Schulte was contact person during the project

Further information and address to all delegates are found in the minutes from the workshop 14-16 November 2004.

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<sup>4</sup> Minutes from the workshop are available on EU Circa website .

### 3. National objectives and strategies for fire safety

**Are there any national objectives and strategies for fire safety in your country? If yes, what are they? Are they quantifiable? And at what level are they set? How are these goals communicated? Are there any tools for checking on how well goals are achieved? How do various organisations work with such strategies?**

#### General findings

Some countries have national goals decided by the government or by its agencies. Some have technical guidelines or other kind of regulations. Projects are running in almost all countries. National goals are sometimes adapted on local levels. A common problem is how to measure the effects. Plans with national goals are a rather late approach. The goals are activity lead with target audiences and appointed stakeholders that get their own area of responsibility.

#### Conclusions after the workshop

For those countries that like to improve fire safety there is an obvious need for **national fire safety goals**<sup>5</sup>. They are developed in cooperation with all concerned stakeholders who are given defined responsibilities. Indicators are used to explain and understand the results. Such measurements provide evaluation of fire preventive activities and the outcome. The process in which you develop such goals has been found to be an important learning activity for all involved. The goals and the commitments are normally made public. National goals are also necessary if there in the future will be some European goals.

#### From the workshop

##### Introduction

The time may have come to recommend explicit and published national strategies for a given period of time including goals to be met. Regulations and other tools should be aligned under a strategy for fire prevention. The benefits, challenges, difficulties should be described. The final report can give some guidance and advice.

##### To develop, which means:

- Need not to be quantified descriptions.
- It may be a question of wording. One may chose a wording which include an advice to establish a systematic process in which one discuss among central stakeholders priorities, strategy, possibly also the need for action plans to be developed, for a particular period of time, based on documentation available, experts opinions, and with the aim to produce a document of strategic character which could be published. And one could also advice a process with the intention to describe explicit objectives to be met, as appropriate for a particular country/region and risk situation.

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<sup>5</sup> Set by the government or governmental agencies

- **explain the benefits**
  - o put strong focus on the issue, political support
  - o gathering views and needs from the most important stakeholders => all agrees on a common strategy
  - o encourage all to be very concrete on strategy and in choice of measures
  - o no excuses allowed after “the go” is given (“this is what we agreed on, this is our commitment”)
  - o obliged to report in aftermath on success or failure (which is a favourable incentive in our work).
- what has to be in place to succeed (a method to register changes within focused areas, pinpointing exposed groups, action plans)
- note the challenges

#### **To implement:**

- the question of responsibility
- who is stakeholders and what should be their contribution  
This is a hard task to cope with in these days. Companies change in many ways and with high speed. They change ownership, they merge into larger companies, often are the real owners situated in other countries (you are lucky if you find them). They change staff and organisation structures. And the focus on income is harder than ever. The diverse nature of organisations involved and the absence of an adequate coordinating framework.
- note the challenges

#### **To measure:**

- why
- how
- which of course is dependent on how the objectives are defined. And the amount of documentation at hand, for example statistics, or the lack of such documentation.

A national strategy is chosen that include priority areas. Goals can then be formulated and after that plans are made where the responsibilities are agreed. The process takes some time.

### **Results from group discussions**

Fire Safety<sup>6</sup> is managing fire risks at all levels by preventing fires, protecting people from their effects, and fire brigade intervention. All three things are done together and in a coordinated and integrated way. Then we will see a safer community. And also fire fighters will have a safer workplace.

There are two parts to the subject – national goals through legislation and goals through action plans and programmes. Both are needed.

Stakeholders must be involved to set attainable national goals. There are lots of stakeholders. Central stakeholders should be invited and become parts of the process when the responsibilities are defined. This can be seen as a learning process concerning goals and aims. The process can be as valuable as the actual outcome.

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<sup>6</sup> Defined this way in the UK and accepted by the workshop as a good explanation.

Statistics are required to assist in policymaking and to measure progress. We want historical data to set the goals and to measure the effects. All data should be defined: otherwise it will be difficult to measure outcomes. To implement such systems you have to develop indicators.

People and insurance costs are not the only losses. The total loss includes all kinds of economic losses both direct and indirect. There are also costs to prevent fires. The authorities show how these programmes can reduce the total cost of fire injury and damage, especially when work has been carried out in consultation with the insurance company.

Lessons can be learnt from international comparisons. Some main figures from each country can then be used. Despite national differences there is a need for EU engagement in fire safety. Already there is such engagement in, for example, common fire standards and regulations for products. But standards are only one part of fire safety.

What role can the Commission play in this? Should we just state that MS should have goals or do we need to reach deeper into this matter? Can one goal be a comparable safety level throughout the whole of Europe? Since “fire safety” is the result of many interacting factors it will be difficult. If such goals are desired or need to be formulated in the future they have to build on national goals.

## Answer from the countries

### Austria

There are Technical Guidelines for preventive fire protection. They are developed by a team of experts (fire brigade and fire prevention). They are recommendations and represent the state of art. Fire safety experts refer to them for fire safety assessment.

Technical Guidelines for preventive fire protection are published.

### Belgium

It is difficult to manage strategies about fire safety in our country because the federal authorities are competent to give basic standards in fire safety without specify the purpose of building.

The regional authorities set up particular rules for hospitals, schools ... (for example). The aren't real objectives but the law of 1979 specifies that the King determines, by decree, the basic standards for fire safety shared by one of several categories of buildings independently of their purpose.

At present time, the basic standards apply only to new buildings. An objective will be write basic standards in fire safety for all buildings.

Objectives on a statistical basis don't exist. It is planned to make shortly these statistics.

The "Superior council" for fire safety gives an advice on a new wording of a law in fire safety. The council is composed of experts (representative of private sector and public sector) in fire safety.

## Denmark

According to the Building Regulation Code "Buildings have to be constructed and furnished in order to obtain satisfactory safety against fire and against the spreading of fire to neighbouring buildings. There has to be reasonable possibilities for the rescue of persons and for the extinction of the fire."

The Parliament has decided to strengthen the gathering of knowledge, analysis and research on fire and rescue topics. In relation to this it has been decided to base the design of the fire brigades on individual risk evaluation in every city.

Furthermore the Parliament has decided to focus on the population's self-reliance e.g. by strengthening the information about the possibilities of receiving education in first aid and basic fire fighting.

The Danish Emergency Management Agency has implemented a plan for reducing the number of fatalities by fire, but there is no quantified goal, apart from a reduction contrary to the increase in size of the groups of population that are most likely to die in a fire.

The goals as such are not communicated to the public, but are implemented by the help of campaigns, leaflets, videos, homepages and so on. They are of course communicated to the fire authorities through direct-mail and magazines.

## Finland

There is no overall strategy specifically for fire safety. Fire safety issues are included in several strategies and programmes dealing with e.g. home and leisure accidents or electrical safety.

Ministry of the Interior draws up annual and five-year plans with general objectives. For the years 2000–2004 one general objective is that the number of fires and other accidents reduces. In annual plans emphasis has been on three issues:

- strengthening information and training activities targeted to general public;
- fire inspections in risk objects; and
- improving cooperation with different authorities, NGOs, etc.

Ministry of the Interior is currently preparing a more detailed accident prevention strategy and action plan.

Ministry of the Interior's annual plans are discussed with involved organisations (some central NGOs).

Ministry of the Interior's general follow-up is based on rescue services' statistics and the annual reports from the State Provincial Offices as well as from involved organisations.



## Germany

There are no national state projects with defined goals.

Protection from fires should be secured by maintaining regulatory fire protection standards. As examples the application of statewide response time frames for the fire brigades or the demand for situational and construction characteristics of structures which will minimize combustion situations and the spreading of fire and smoke and thus allow for the rescue of persons and animals and effective suppression methods in cases of fire.

The fire fighter associations have started projects to increase the number of smoke detectors in private residences and residential buildings. Several fire brigades conduct local campaigns with the financial support of the insurance industry. Results are not tabulated.

The fire fighter associations have provided advertising and informational material. These are distributed to the population at large during special action days. The fire brigades advise locally on the requirements and correct installation for smoke detectors. Results are not tabulated.

The fire fighter associations have initiated fire protection education and information projects.

Expert groups have gathered concepts and material and teach pre school children and elementary school children about proper behavior in cases of fire or they teach caregivers and teachers on these subjects. These tasks are performed in varying ranges voluntarily by local fire brigades. The next goal will be the teaching of adult citizens.

Some of the fire prevention and disaster response legislation of the states now incorporate fire safety education as an official mission of the fire brigades. However, measures to check the results of these goals are not in place.

## Greece

As in most countries there are national objectives for fire safety in Greece, concerning the decrease of the number of fires and their consequences. They could be summarized to the following:

- Life safety
- Property protection
- Environmental protection

They are not quantifiable and the Government sets them.

Authorities and especially H.F.C.H. implement activities including public information, continuous training of fire officers and fire fighters, hiring of new fire fighters, purchasing and hiring of new and modern fire fighting equipment, publishing of new regulations concerning fire protection, increase of extraordinary inspections in fire safety etc.

There is really a problem in the communication. Slow progress has been made and the public is not very sensitive in building fires, although it appears a great concern for forest fires which is placed in the first priority of the Government.

## Ireland

The Review Report on Fire Safety and Fire Services (2002) has highlighted the need to develop explicit national objectives and strategies. At the moment, it is fair to say that fire safety objectives are more implicit than explicit, and that the field is activity-led rather than results-driven.

The current implicit objectives could be described as:

- Prevention of loss of life, with a particular focus on preventing multi-fatality casualties in buildings to which the public have access;
- Prevention/ Reduction of property loss through fire, although it is the measures taken to ensure safety of persons which contributes also to property protection;
- Protection of state and national infrastructure (eg airport, hospital) from loss/ damage or disruption of vital economic activity (eg tourist industry, IT plant) by fire.

The principal current strategies are:

- To get fire safety advice to target audiences;
- To ensure that design of new buildings takes proper account of fire safety;
- To ensure that appropriate passive and active fire protection is in place in court licensed premises;
- To ensure that “persons in control” of different categories of premises are aware of their responsibilities, and how they can discharge these;
- To undertake inspections of different types.

These may be summarized as the three “E”s of fire safety – **E**ngineer the building, **E**ducate the users and **E**nforce on those with responsibility.

The Review Report referred to has identified the need to take action in developing and implementing goals in this area. The report highlights the difficulty in making a causal connection between the safety work undertaken to date and the absence of major fire incidents. The diverse nature of organizations involved and the absence of an adequate co-ordinating framework was highlighted also by the review, and is one of the issues which needs to be tackled in Ireland. Other key issues will be measuring the efficiency of the resources employed in fire safety work (how much benefit is obtained from the current methods of work and could better outcomes be achieved if this level of resources was used differently?), and the effectiveness of the resources used in fire safety (is the work and fire safety input in the construction sector achieving safer buildings, and are the costs of fire safety in construction pitched at an appropriate level or too low (unsafe?) or too high (diminishing returns?). How is our balance between the three “E”s – do we currently have too much focus on the engineering aspect, and too little on the education and enforcement? The implicit objectives and strategies outlined above are driven via the legislative framework, the training provided, the publicity generated, and by the work of each organization which is responsible for the activity within its own remit.

## Italy

Objectives result from political acts by the Minister, implemented by Executives at various levels, according to their specific responsibilities. The objectives are those of administrative

simplification, review of existing rules in order to update them according to the technical and industrial development, enhancement of studies and research activities, the development of the culture of Safety, particularly referring to the major risk activities, and the raising of the activities of studies and research.

## Norway

In 2001 the Ministry of Labour and Government Administration presented to the Parliament a special report on fire and explosion prevention (St. meld. nr. 41 (2000-2001)) summing up the results of the efforts in the past decade, and establishing new strategies and goals within this field. The report was discussed by the Parliament in June, and there was full consensus on the proposals set forth in the report. According to the report the basic strategies for the next 5 years are:

- Public control, legislative development, information and other public initiatives shall be directed towards the reduction of risk
- The risk in connection with fires, explosions and other accidents shall be reduced to a level as low as reasonably practicable
- The risk of fires and explosions in enterprises shall be continuously reduced

The new national goals in the area of fire and explosion prevention are:

- Zero fires and explosion in general and in connection with transport of dangerous goods where many fatalities in one single event may occur (i.e. more than 4 fatalities)
- The average number of fatalities in fires in dwellings shall be reduced considerably compared to the average level for the period 1995-1999 (Average 53)
- The material losses in connection with fires, explosions and other accidents shall not extend beyond the average level for the period 1995-1999 (Average 2,7 billion NOK)
- Zero fires with loss of irreplaceable national cultural heritage

These goals are communicated in many ways. DBE's Strategic Plan 2002-2005 is founded on the goals. The goals and related strategies are quoted in all basic documents for fire safety work and are often referred to in lectures etc.

DBE makes continuous registrations necessary for controlling the status on each priority area/programme.

On local level these national goals and strategies are very well communicated. Larger fire services have set additional targets for their own work.

## Sweden

In order for there to be good coordination, a plan of action for fires has been adopted by the SRSA for 2002 to 2004, which includes three concrete goals that are to be achieved during the specified period. The goals are:

- reduce the number of fatalities resulting from residential fires by 10 per cent
- reduce the number of fires in buildings by 10%
- reduce the number of major fires (> 1.5 million SEK ~ 160 000 Euro) by 10%

Goals are communicated via conferences etc. All stakeholders have their own areas of responsibility. It is relatively easy to check results by looking at the annual statistics, but

difficult to find whose work is behind a result. In addition, some municipalities have local goals.

In the forthcoming reformed Swedish Rescue Services Act, fire prevention efforts will have a prominent place. The idea is to make building owners more aware of their responsibilities to protect themselves and their property. Parliament generally prefers general laws with less detail. The new act will state some national goals for incidents/accidents; and will make it mandatory for all local authorities to formulate their own quantifiable goals. Fire inspections might be reformed and might the future mainly be for the inspection of internal management systems for fire safety. The new “Act against accidents” was in place 1.1. 2004.

## The Netherlands

The general goals for fire safety are:

- The risk of users of building, fire personnel and other assistance personnel, become a victim due to fire has to be reasonably small.
- A fire has to be kept within reasonable proportions
- The risk of unacceptable environmental pollution due to fire must be reasonable small.
- The risk of substantial material damage due to fire must be in proportion to the costs of measurements and securities to control the damage.

A new goal, and one of the means to achieve the more substantial goals mentioned above, is to make civilians, private/public organizations and local authorities more aware of their responsibilities to organize and maintain fire safety and/or the obligation to inform about safety in general which includes fire safety.

The general goals for fire safety are communicated through legislation and in documentation directed to all relevant organizations, concerning responsibilities, regulation and fire safety. Information to the public is distributed by the local authorities.

In order to create more safety awareness a national fire safety program will be released this year. Its main aim is to get the safety message effectively through to the public. TV is the dominant medium. Private/public organizations and local authorities will be informed about the program through conferences, special bulletins, and specialized magazines etcetera.

Due to the relatively small number of accidents and casualties (how lucky we are!), to the quality and the detailing of statistics and the problem of connecting figures to measurements we are experiencing a lack of tools for checking our achievements. In addition to the statistics we are therefore working on means and measurements to evaluate our policy. Measuring awareness and its effect on fire safety will be the main challenge.

Fire safety in general and the national communication program on fire safety have different aims and activities for the different stakeholders. The different stakeholders all bring in their own aims and responsibilities, which will affect the employed strategies.

## UK

The national target (England and Wales) -

Reduce the incidence of accidental fire-related deaths in the home by 20% averaged over the 5-year period to March 2004 compared with the average recorded in the 5-year period to March 1999.

There are proposed Service Delivery Agreement targets which will update the above (set in 1999) – “To reduce the number of fire deaths in the home by 20% averaged over the eleven year period to March 2010, compared with the average recorded in the five year period to March 1999 – with a *floor element* that no local authority fire brigade will have a fatality rate more than 1.25 times the national average by March 2010”

They are promulgated by central government and historically measurement has been a combination of statistical returns to the government’s statistical department and with ‘reality checking’ carried out by HM Fire Service Inspectorate during routine inspections of fire brigades.

In Scotland there are no quantifiable or targeted outcomes for the fire services and the delivery of fire safety objectives. This is distinct and different to the approach in England and Wales and represents a different form of governmental response to the management and relationship with local authorities. In many areas local performance indicators are used and there are statutory indicators reported upon by the official audit body for all public authorities, Audit Scotland, and the Accounts Commission. Statutory and local performance indicators are not, however, targets, rather they reflect local performance as an input quantified in resources.



*Fire safety can be described as the result of several activities. Fire Safety also make the fire men safer at fires. Picture from UK (Dave Berry)*

## 4. Community fire safety

Other topical issues in fire prevention

What are the main ongoing projects or problems in the field of fire prevention and fire safety in your country today? Are there any specific areas that have been identified as crucial for future work? Good examples of successful fire prevention programmes the results of which have been documented?

### General findings

Community fire safety programmes can raise individual awareness. One has to deal with target groups and create awareness. Communicate fire risks and safety and broaden partnerships. Focus on fires in dwellings and educate children. Act against arson. The fire brigades need to do more prevention work and broaden partnerships. The outcomes of the programmes should be measured.

### Conclusions after the workshop

So-called **Community fire safety programmes**<sup>7</sup>, at both a national and a local level, are adapted around Europe. They involve all stakeholders and the responsibilities are defined along the safety chain – from authorities/organisations to the potential victims. Target groups are identified and different groups need specific treatment. Such programs include besides legislation and techniques also actions such as information, education and exercise. Owners of buildings and industry get information and education but are also faced by inspections and legal pressure. Other groups are only reached by information and education. The results are measured and compared with national goals. The programs are communicated and the development gives a better understanding of the complex problems and the need for a broad engagement.

Fire safety programmes can be used to present what values are achieved from money spent on fire safety and how it is balanced between prevention activities, preparedness and response recourses. In several countries there is a move, within the fire services, into more preventive interests. All kind of local bodies are involved and it is an advantage if the fire brigade take the lead. The introduction of such programs cannot rely only on voluntary actions. Therefore it may be a need for legal or other governmental pressure to support such programmes.

### From the workshop

#### Discussion items:

What is Community Fire Safety?

How do we reach Target Audiences?

Where are the tools to assess effects?

What are the main ongoing projects or problems?

Are there any specific areas that have been identified as crucial?

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<sup>7</sup> From UK, Bain report December 2002. Defined in order to prevent misunderstandings.

Good examples of successful programmes that have been documented?

This topic includes engineering, enforcement and education.

In the future we have to deal with:

- community programmes
- explain value for money spent on the fire services
- uniform statistics
- problems with arson
- human behaviour.

## Results from group discussions

Community fire safety means the delivery of fire safety education, outreach and intervention aimed at preventing fire-related deaths and injuries in the home; and reducing the risk, then number of incidents, and the cost for the community of the effects of fires. Community fire safety is intended to reduce the risk of fire occurring at all and not merely trying to combat it once it has happened. The majority of domestic fires are preventable with simple precautions, as the major risk factors for domestic fires are smoking, the use of chip pans and misuse of domestic appliances<sup>8</sup>. Related websites: [www.firekills.gov.uk](http://www.firekills.gov.uk), [www.firesafetytoolbox.org.uk](http://www.firesafetytoolbox.org.uk)

Introducing community fire safety programmes is complex since the system involves many different parties. The programmes are linked to national goals and developed in a process that includes both legislation and education. There are local, national, private and official organisations with knowledge, interest and competence that should be involved. Focus should be on domestic dwellings but take into consideration the risk of fire in other buildings. Schoolchildren and the elderly are examples of victim groups that could be reached by information. The partnership includes industry and the owners of many facilities where inspections and legal action is needed. Many methods are used to achieve the targets and several means can be used at the same time. Try to get community fire safety on the agenda. It is a way to strengthen the position of fire safety. To be systematic a risk-based approach is used.

Many different groups along the safety chain should be involved. They include officials, institutions, fire services, potential victims and vulnerable groups. All groups need support in some way or another. Statistics help to identify target areas.

The responsibility for taking action must be placed somewhere in the local municipality where the risks can be identified and relevant activities implemented. Other groups than the fire services can be better placed to work with fire safety for target groups and may deliver certain aspects of the fire safety programme. But fire brigades are the natural leading body. Their presence in fire prevention has to be obvious. It is a way to show what value citizens get for the money spent on the sector.

This is not a voluntary approach for the fire services. Some kind of legislation may be needed to change old systems or routines. Such supporting legislation is crucial if the job is to be done properly. Governmental pressure on local authorities and national legislation can be useful. Countries need to find ways to show how resources are allocated for fire safety. The

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<sup>8</sup> From UK, Bain report December 2002. Defined in order to prevent misunderstandings.



public need to know how money and other resources are used. A strategy in Norway, from 1991, has been to use more resources on fire prevention.

The UK fire brigades are regularly inspected and their work with fire prevention is reported to the government. This inspection will be connected to a system for funding. There will be a demand on the brigades to publish how they are going to use the money in the community.

The complexity is obvious. The topics are overlapping. The EU can be a ground to present good examples and to exchange experience. Good examples of successful work can be found among the answers.

## Answer from the countries

### Austria

#### Ongoing projects

There is a constant progress in the field of fire prevention and fire safety. Some topics are: Common building laws; Development, revision of technical guidelines, implementation of the EU standards of the classification of fire resistance and reaction to fire.

#### Areas crucial for future work

Simplification and standardization of the legislation

### Belgium

#### Ongoing projects

An Important problem is the competence divided between two levels (national and regional) Several projects are ongoing ( in fire prevention and in the field of fire):

- Reform of fire brigades
- Suggestion for modifications of basic standards
- Risk analysis (study)
- Statistics and updating of database

#### Areas crucial for future work

The risk in fire prevention is an important element to think out design of rules and standard

### Denmark

#### Ongoing projects

An "Event safety guide" is under production.

Systematic gathering of experience from fire incidents has been decided.

The union of insurance companies has implemented a data base, that is compatible with the DEMA programme for registration of fire incidents. This makes it possible to compare the registered damage with the fire brigade's effort and the cause of the fire.

Fire Safety Engineering in the design of buildings is about to be implemented.

#### Areas crucial for future work

The number of fire fatalities.

The education of children and young people in fire safety.

Arson seems to be a major cause for fire (can be as much as 40% of all fires)

### **Successful fire prevention programmes**

There has been a very good response and a great demand for our learning programme for the first grades in school, based on well-known characters from the national TV-channel. But up to now we have not been able to measure the effect on the children's behaviour.

## **Finland**

### **Ongoing projects**

The need to place more emphasis on fire and accident prevention. In this the biggest issue is to change the fire brigades attitude towards prevention. The role of fire brigades needs to be changed from reactive to proactive.

Fire safety in nursing homes and sheltered housing has been on top of the agenda these last two-three years. An easy model for fire and evacuation safety analysis has been taken into use in sheltered housing, nursing homes and institutions.

Prevention of arsons has been an on-going project for several years and will continue to be an important issue.

### **Areas crucial for future work**

Risk-based approach in prevention work. As the resources are not likely to increase better results can be achieved only by targeting the activities in a more efficient manner.

Ageing population and the needs for safer living environment.

Better data on accidents as well as more systematic and broader analysis of the data.

### **Successful fire prevention programmes**

Information activities directed to both consumers and professionals on electrical fires.  
Safety training for hot works operations.

## **Germany**

### **Ongoing projects**

Cases of arson caused by children are relatively high. Because of the initiatives of the fire brigade associations, several of the states have incorporated fire protection education into their fire protection laws. The other states still need to develop and harmonize these conditions.

In Germany 450 to 500 persons die as a result of fires (about 6 fire deaths per 1 million inhabitants), 80% of these in residential buildings. The population must be better educated on the topic of fire safety and initiate self protection by means of smoke detectors.

There are efforts in place to incorporate detailed fire protection requirements into the buildings laws and regulations of the states. The regulations of the EU such as the Eurocodes are an important element in speeding this process.

### **Areas crucial for future work**

The targets of the states unfortunately are not uniform. Several states have the following topics under discussion:

- Education of the population regarding fire safety.

- The effort to arrive at meaningful and uniform fire fighting statistics throughout Germany and to apply the results to develop better fire safety.

## **Greece**

### **Ongoing projects**

In Greece the main problems in the fields of fire prevention and safety are mainly focused to industrial plants of high fire risk and large and complex buildings, recreation centres and entertainment places. In the last two cases, Police and local municipalities are also involved. The main ongoing projects are the underground urban railways (metro), tunnels in new motorways and railways, airports, 2004 Athens Olympic Games structures.

### **Areas crucial for future work**

- Revision and modernization of Fire Regulations.
- Introduction of Performance Based Codes, especially for the existing old buildings
- Establishment of a Greek Fire Testing Laboratory
- Application of CPD and introduction of the harmonized European Standards in the Regulations
- Edition of legislation concerning special structures and installations (tunnels, airports, LPG and NLG installations in buildings, etc.)
- Authorization of the Ministry of Environment authorities to have the control of the total fire safety design (passive including materials approvals and certificates and active fire protection).
- Authorization of the Fire Brigade for prevention, inspections of buildings, training, education of the public and fire extinguishing.
- Regulations for existing and historic buildings

### **Successful fire prevention programmes**

There are many of such examples related especially to active fire protection but have not been documented. It must be mentioned, that most of the buildings in Greece are constructed from concrete, which is a fire resistant material.

## **Ireland**

### **Ongoing projects**

- Update of primary legislation
- Introduction of harmonised EU test methods and standards into TGD B

### **Areas crucial for future work**

Community Fire Safety

### **Successful fire prevention programmes**

A number of fire authorities have implemented good programs in relation to specific building categories E.g. guesthouses, child care premises. Officers of these authorities have provided reports and inputs to training courses subsequently.

## **Italy**

Ongoing projects

The reform of the Ministry of the Interior has considerably influenced also fire prevention services, through the creation of the Central Direction for Prevention and Technical Safety. At the beginning of 2002 the various competent offices were reorganized in order to:

- to simplify the technical-administrative processes;
- to strengthen the quality of the studies at the basis of the technical regulations on fire prevention, increasing the value of the interdisciplinary technical support during the processing of the above-mentioned regulations;
- to give value to fire engineering methodologies through the establishment of an ad hoc working group composed of experts from the National Fire Brigade, of teachers from universities and of professionals from the fire prevention field;
- to boost the preliminary phases of safety reports concerning the plants subject to the risk of major accidents;
- to develop new technical regulations as to those activities that have not yet been regulated or that needed updating (hotels; garages; LPG depots; distribution plants of LPG for transportation; air conditioning and ventilation systems; thermal plants at combustible liquid; hydrogen for transportation; offices; trading centres; exhibitions; fairs and exports);
- to carry out important plans aimed at improving the services to community and users, such as **“safety together and fire prevention”** (accomplishment of a web page within the institutional site [www.vigilfuoco.it](http://www.vigilfuoco.it), in order to increase social sensitivity on risk prevention and to foster accident prevention culture and environment safety); **“regulations on the control of products”** (working out of rules on controls of products relevant to fire prevention, in order to regulate this matter from the viewpoint of transparency and uniformity of aim, through objective criteria that can guarantee uniformity of controls except for occasional conditions that can compromise comparison of tests); **“laboratory Europe 1”** (adjustment of laboratory for fire test in order to qualify it to carry out tests according to European standards for resistance to fire and reaction to fire of buildings and materials); **“laboratory Europe 2”** (adjustment of laboratories of hydraulic and electronics, in order to qualify them to carry out tests according to European standards on fire-fighting plants and equipments); **“laboratory for the study of commodities”** (realization of a laboratory for the study of materials and PPE supplied to the National Fire Brigade).

### **Areas crucial for future work**

Now we are attaching particular importance to the following areas:

- use of safety engineering methodologies in the fire-fighting planning, especially as to the risk of major accidents;
- increase of safety culture in the country;
- strengthening of the volunteers law system and of its interactions with the existing regulations.

### **Successful fire prevention programmes**

In June 2002, extraordinary organizational measures were adopted to strengthen the examinations of the safety reports regarding of Major Risk activities. The monitoring of this activity by Regional Technical Committees has recorded the doubling of the activity itself thanks to the adopted measures. Special courses for the training of Fire-Fighters Officials were carried out, at regional level, for the inspections in the Safety Management System (SMS) in this field.

## Norway

### Ongoing projects

For the last 12 years there have been a main focus on the introduction of more and better fire prevention work to be done by the fire services. The criteria of a minimum of one fulltime well qualified employee per 10 000 inhabitants in each fire service region are met. Efforts are now made to extend the co-operation between the fire services and the local electrical safety inspection authorities.

A project with the aim to secure fire safety in residences for people with special care needs, are under way. An extensive mapping work will be done and suitable measures will be proposed. The project is carried out as a co-operation between several relevant stakeholders.

An analogous project with the aim to avoid loss of irreplaceable national cultural heritage is also running.

Concerning loss of lives in fires, a project with focus on fires in dwellings is introduced. Data from the statistics of fire causes constitute a basis for the project. Elements are electric installations and equipment, increasing use of gas in households, peoples behaviour to fire risks etc.

A panel of experts appointed by the Ministry of Justice has proposed a series of measures to improve quality regarding fire investigations. One of the proposals aims at the establishing of regional fire investigator committees consisting of forensic police officers, local electrical safety inspectors and local fire prevention officers. The committees' main issue are to improve fire investigation in a region. As it seems at the moment a region is similar to a police district. Four test areas have been suggested and it is now up to the justice authorities to decide if a test period is required before the system is implemented in all the police districts.

### Areas crucial for future work

The goals and strategies mentioned introductorily in this questionnaire indicate our main focus in the fire prevention work. Reference may also be made to DBE's Strategic Plan 2002-2005.

### Successful fire prevention programmes

A continuous focus on fire safety in hotels, hospitals and health care institutions in the last decade has lead to no fires with more than 4 fatalities since 1986.

A continuous focus on fires in dwellings and making smoke detectors and fire extinguishers in dwellings mandatory have lead to a decrease in number of fatalities caused by fire (10% decrease in the period 1991-2000).

A particular commitment to fires in agricultural holdings has lead to fewer fires in such objects. Since 1998 the amount of fires in cowshed etc. has been reduced by 50%, the insurance loss was reduced by 30%. During 2002 4000 new fire alarm systems were installed. The campaign was carried out in close collaboration with insurance companies, farmer interest groups and others.

## Sweden

### Ongoing projects

Approximately 10,000 fires are deliberately started in Sweden each year. Children and juveniles start the majority, a problem that has been specifically studied; as have intentionally started fires in general in other projects. Social factors, and general damage, including that from fires, that affects public buildings (schools, nurseries, sports grounds).

Safety at musical events is another area in which a high level of safety is required. The government has instructed SRSA to co ordinate most kind of safety actions. The task is performed together with performers, police and local municipalities.

### Areas crucial for future work

Matters related to human behaviour are the single most important fire safety factor today.

Errors, deficient routines, or ignorance all contribute to the occurrence of fires. Technical solutions for fire prevention must be complemented by increased knowledge and understanding of all citizens.

Fire safety is affected by interiors; and so work is currently in progress concerning the fire safety of interiors, e.g. furniture, fittings, fabrics.

## The Netherlands

### Ongoing projects

A serious problem is to put legislation to effect. Legislation has a tendency to grow increasingly complex. The Housing Act originates from 1901 and sees to a very complex topic. Building regulation has built up to a very complex piece of legislation which is difficult to implement. As a result it is hard to arrange for sufficient knowledge with inspector and permit applicants likewise. We experience a lack of sufficiently trained inspectors. We are exploring means to improve the effectiveness and efficiency Inspections by better coordination between inspection bodies.

A lot of effort is put into the process of permit admission. The long term value of a permit is much affected by the way the regular checks are carried out. In practice the checks are neglected in favour of the permit admission.

### Areas crucial for future work

Maintaining legislation and to create (fire) safety awareness.

## UK

### Ongoing projects

One of the principle ongoing projects is the development of strategic partnerships within communities. The fire safety toolbox has been developed as a resource for brigades to support their work in community fire safety. The existing toolbox module on 'Community Partnerships' which shows the extent of the opportunities available have increased in the areas of community health, housing, neighbourhood renewal is being updated to heighten the importance of brigades maximising their opportunities. This module is being reviewed and revised as part of an ongoing programme. ([www.firesafetytoolbox.org.uk](http://www.firesafetytoolbox.org.uk))

This year the National Community Fire Safety Centre will set out a coherent strategy for education curriculum involvement and educational support on a national basis. This will take into account wider issues relating to fire service work with young people and a range of other potential partners in education.

### **Areas crucial for future work**

Community fire safety is an integral part of fire risk management and risk reduction, providing the continuous preventative approach which works hand in hand with fire regulation and fire legislation.

Future planning must inevitably be directed to support the risk-based priorities of fire brigades, in such areas as promoting Home Fire Risk Assessments.

It is no less important that we continue to communicate with the public and all of our partners through using the most effective means. The Centre's website will continue to be developed as a medium for direct linkage with the public. ([www.firekills.gov.uk](http://www.firekills.gov.uk))

### **Successful fire prevention programmes**

As indicated earlier, at least two national campaigns are run every year, based around the concepts of Prevention, Detection and Escape. All of these campaigns have both pre and post campaign research carried out which is available, together with local statistical evaluation which enables measurement of reductions in fire deaths and injuries together with changes in attitude and behaviour of those sectors of the community targeted by specific themes.

In Scotland a shift in policy, which enables the introduction of integrated risk management, is to be undertaken. This process, which is shortly to commence in England and Wales and Scotland, deliberately aims to integrate a series of policy initiatives as well as assessment of risk. The outcome-based process is designed to secure a safer environment.



## 5. Fatal fires

### Numbers

Country	Pop. million	Fatal fires 2001	Dead/1 mill	Comments
Austria	8	52 dead	6.5	Number of fatalities from all types of fires.
Belgium	10,2			Not available
Denmark	5,4	74 dead in 72 fires	13,7	These figures refer to all fatal fires regardless of type, building, including fires in vehicles.
Finland	5,2	77 dead in 67 fires	14,8	66 died in buildings. As there currently is no centralised reporting system for fire deaths these numbers are based on media information.
Germany	82.4	600	7,3	500-600 estimated.
Greece	10,5	64 fatalities (1 fire fighter)	6,1	The above data refer to all fatalities regardless of type, building, area (forest-urban) etc.
Ireland	3.96	58 dead	14,5	These figures include all fatalities occurring within 28 days of fires to which fire brigades responded. It includes fires in all categories of buildings and other locations (eg car fires). The great majority of fatalities occur in domestic buildings. In 2001, two fatalities occurred in a building classified as other than domestic, and one occurred in an outdoor situation. (1998 – 45, 1999 – 51, 2000 – 43)
Italy	56	Around 1060	1,9	Data related to 2001 are not available. According to statistics related to previous years, the number of fatalities due to various reasons following fire events are 1.9 in a million inhabitants
Norway	4,5	65 dead in 54 fires	14,4	The figures refer to all fatal fires regardless of type. (47 fatal fires, 53 fatalities in 2000 60 fatalities in 1999)
Portugal	10	61	6,1	103 dead in 2002 (76 at home and 37 in industry, incl 1 fire fighter) 61 dead in 2001 (56 at home and 6 in industry) 53 dead in 2000 (48 at home and 5 in industry)
Sweden	8,9	137 dead in 121 fires	15,4	These figures refer to all fatal fires regardless of type, building, vehicle etc. 1999: 100 fires - 110 fatalities. 2000: 92 fires – 98 fatalities 2002: 126 fires – 137 fatalities
The Netherlands	16,2	62 dead	3.8	38 of these 62 fatalities are due to residential fires. No fire personal.
UK	58	627 dead in 560 fires	10,8	A person whose death is attributed to a fire is counted as a fatality even in deaths occurring weeks or months later. This figure is subject to revision as later information confirming the cause of death is received. The estimate of this revised figure is 606.

### General findings

The span in deaths/one million people is rather big. Why is that so? MS need to declare what is included. Can be useful to find trends when this is collected year after year.

The International Association for the Study of Insurance Economics deliver every year a bulletin called “World Fire Statistics”. The numbers presented there are for Sweden not the official numbers that we deal with. They give higher numbers by some reason. Check your own at [www.genevaassociation.org](http://www.genevaassociation.org).

Who provides the figures and how do the insurance companies use it?

## A typical fatal fire in some countries

### Austria

In the evening a person lights a candle in the living room. The person goes to bed and forgets to extinguish the candle. A slow developing fire is caused by the candle and stays unattended for a long time but produces a lot of smoke. The fire spreads and is spotted by a neighbour who calls the fire brigade. The fire brigade arrives and breaks open the door. The fire-fighters equipped with breathing apparatus extinguish the fire in the living room and simultaneously search the flat. They find the person in the bed. The person is taken to open air. Reanimation fails. Although the fire did not directly affect the sleeping room, it was filled with smoke and the person died from smoke inhalation.

### Belgium

It is a fire in a private house.

### Denmark

A typical fatal fire includes a single-living male aged over 65. Fire caused by smoking, combined with the abuse of alcohol or drugs/medicine. Dead or deadly injured before the fire brigade arrives.

### Finland

A middle-aged man living alone falls asleep or passes out failing to put out the cigarette or take the kettle of the cooker.

### Germany

Victims were a mother and one of her children. Unknown to the parents, the older child played with matches and a candle. The fire brigade was able to save the Father and two of the children from the attic apartment by means of ladders. The mother and one child were found dead. The survivors were taken to a hospital with severe smoke inhalation poisoning. The apartment did not have a smoke detector. The fire brigade extinguished the fire quickly.

### Greece

The victim was an old alone woman who was using a small hanging oil lamp near clothes and books. When the Fire Brigade arrived, she was found dead on the floor of her bedroom. The victim tried to escape but it was too late. There wasn't any fire safety mean in the flat. The fire was very easy to be extinguished.

### Portugal

Two typical fires

- In a private house, caused by overheating of the electrical cables and systems.
- In the small industries, caused by bad function of the equipment, machines and electrical.

## Sweden

The victim was a middle-aged man who lived alone. He was known as a smoker and he often drank beer or spirits. Sometimes he fell asleep when smoking in an armchair, a sofa or in bed. Neighbours and friends were aware of this risk after some incidents. When the fire brigade arrived he was found dead on the floor. The victim had probably been careless with a cigarette. There was no working smoke detector in the small flat. The fire was easy to control.

## The Netherlands

The victim was a middle-aged or senior person. The fire occurred during the night when the person was sleeping. There was no working smoke detector in the house. The cause of the fire was probably a bad working or badly used equipment. The fire was easy to control.

## UK

Fire started in lounge on ground floor in a 2 storey terraced house. Fire appeared to be of accidental nature and 1 female person was found in the front ground floor living room apparently dead. 1 adult male and 3 child escaped before arrival of the Brigade.

# Fire deaths per million inhabitants

## Fire death rates – abstracts from the full reports

Country	Dead/mill
Austria	6.5
Denmark	13.7
Germany	7.3
Greece	6.1
Finland	14.8
Ireland	14.5
Italy	1.9
Norway	14.4
Portugal	6.2
Sweden	15.4
Netherlands	3.8
UK	10.8

Fatal fire rate, dead/million<sup>9</sup>, varies a lot – why? Most of these fires happen in homes. National comments are found in the full report and there are some definitions. This abstract is for use in the discussions.

The workshop discussed the differences. Countries with good figures tried to explain why others have problems and vice versa. An open question was asked and here are some notes from the whole group.

### *Differences can be declared by:*

More or less candles	Elderly people living at home
Heating systems	Open fires
Alcohol consumption	Use of wood, not bricks and stones
Number of fire brigades	Number of voluntary fire fighters
More or less electrical equipment	Rules for cables
Differences in homes	Rate of awareness
Tradition of smoking	Elderly people in institutions
Average age	Tough regulations on homes
Human behaviour	Drinking habits
Climate and culture	Norm for electrical installation

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<sup>9</sup> Fire Deaths – international information sources (2003-11-05, tabled at the workshop)

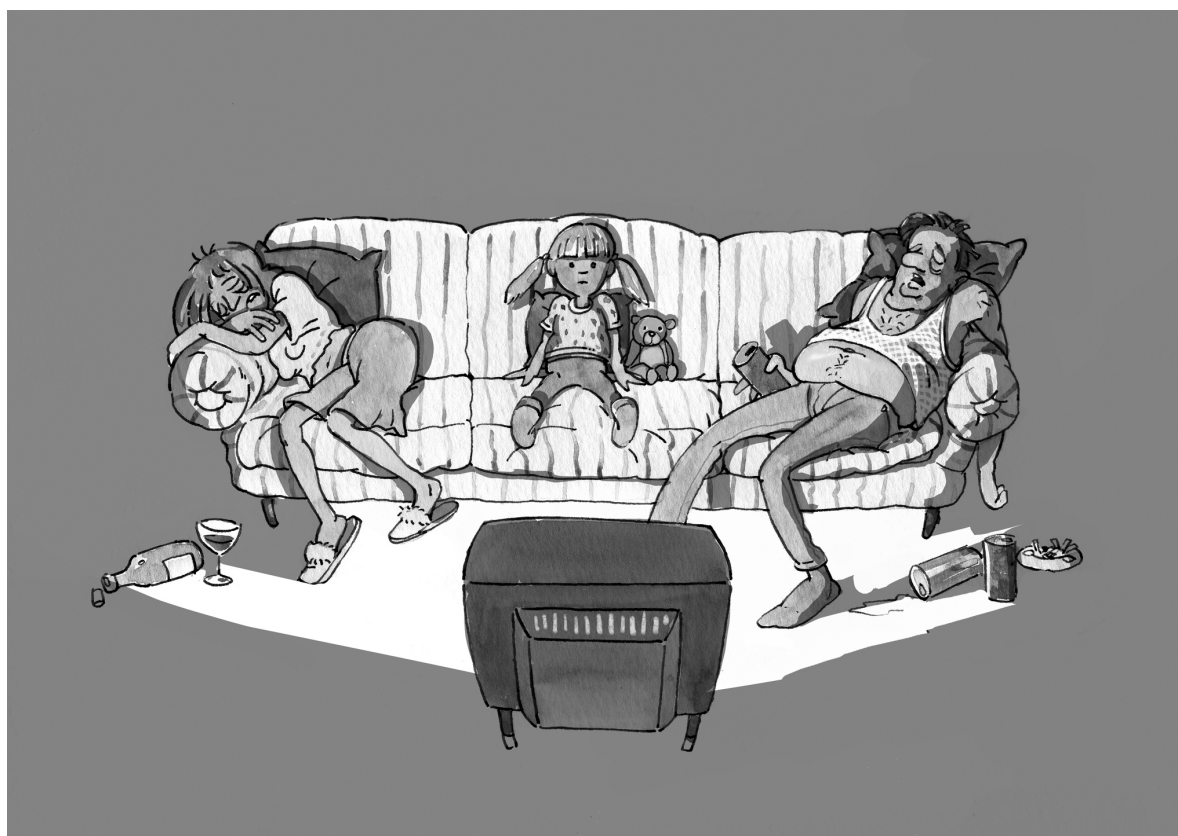
The causes of fire deaths cannot be found easily. It is up to each nation to address its problems. Behavioural issues are most important. And is also complex since single human factors like the total consumption of tobacco or alcohol cannot explain the differences. You also need to understand how and when such drugs are used and by whom.

This small exercise illustrates that we **have to use the same definitions** when discussing fire problems. Comparisons cannot be made until there is agreement.

### Smokers in some European countries. Men/women<sup>10</sup>

Denmark	31/27
Germany	40/32
Greece	47/29
Finland	27/20
Norway	30/30
Sweden	16/19
Netherlands	33/27
UK	28/26

There is no connection between the number of fatal fires and the number of smokers.



*Fire safety can include behaviour, smoking, drinking habits, risks from furniture, toys or other home equipment.  
(Illustration from Swedish Rescue Services Agency)*

<sup>10</sup> WHO 1999-2001

## 6. Statistics and reports

**National statistics will be compared as a base for further work. These will detail fires from different types of buildings or activities, and the number of fatal fires and their causes. Trends can be found in different Member States that indicate areas in which common action could be useful.**

**How are the reports and statistics used?**

**Are there any other sources of information?**

**Is the data analysed or used in other ways in fire prevention work?**

### General findings

Statistics are used to find trends and facts, for information purposes, for mission planning or benchmarking. Mostly they are used for turnout statistics since they make up the majority of the statistics. After some years of national use the quality improves and the systems become more useful. Statistics can be used to develop and evaluate fire safety policy and not only trends but also projections for the future level of fires, injuries etc. Pre and post campaign research use the figures and some use them to implement reduction strategies. There are differences between the legal requirements and willingness to provide national databases with this kind of information. Currently most of the information deals with fatal fires.

Some countries like to obtain more information from the police – or have more police involvement in investigations. Several fire services have or intend to implement special fire investigations programmes. Then you can get more details on the malfunction of products, awareness, behaviour and responsibility, with the focus on causes. The cooperation with insurance companies can be improved. Normally they only provide the total costs as a summary from all fires on a national level.

The statistics are seldom detailed enough to draft new regulations. There is a great potential for wider use. Today academic researchers are the most frequent users. Authorities also have to adapt a habit of using the results and conduct more analyses. The feedback loop between fire events and the fire protection can be further developed.

All Core Group-members ask for better, not more, statistics. They must be used with a strategic focus. All terms need to be correctly defined otherwise the figures will not be comparable. We need common European Fire Statistics e.g. detailed statistics to be able to perform, for example, cost/benefit analyses. Statistics need to be used for national agencies to suggest rules, provide adapted information and to find trends and new threats.

### Conclusions after the workshop

**Statistics and facts around fires** are essential for all nations. Fire brigade statistics are only one input besides many other sources such as data from insurance companies, facts on populations and buildings. Fire investigations programs can provide important details that are essential to suggest improvements for example on products. Statistics need to be of high quality and well defined. In many cases there is good knowledge about response actions but less on causes, problems and losses in deaths and economy terms. More can be done in most

nations to find effects, to identify and declare trends. There is also a need to better understand the differences when benchmarking is performed within and between countries.

Some facts and statistics can be used by the Commission to give an overview of the fire safety problems in Europe. National systems will be the necessary base. All such figures shall be clearly defined and there are concerns with the present international fire statistics. More efforts can be done, by support from the Commission, to develop better basic statistics to get a better understanding and ways to address fire safety.

## From the workshop

### Discussion items

- What do we need and why?
- Minimum requirements on national systems?
- What is the purpose of comparable European fire statistics?

### Results from group discussions

All nations need to have basic facts from fires. This is essential when you develop and evaluate policy and regulations. You use it to define target groups, to show the effectiveness of means and methods. A more preventive approach should be developed in some systems. More efforts can be made to measure and find the effects of new rules or other improvements or changes. The causes of fires, fire location, type of buildings involved and costs of fires should be included. The causes of fatal fires and injuries are also vital information. A good system will also expose unsafe products and trends. It can be used for national and international benchmarking.

A reliable database with high quality and agreed definitions is the national goal. It was noted that system quality is improved after some years of use. High quality is important when the figures are used in scientific research. Comparability can be a problem between sectors and you can for example not be sure that the police and insurance companies have the same definitions. An initial improvement is to declare vital definitions in all systems.

Much more than statistics from fire brigades is required to understand fire problems and to develop goals and programmes. A good national system provides feedback for optimising programmes. Costs need to be known. The insurance company can give some costs but does not cover all fire losses. Results from fire investigations are another essential part when they are compared with general fire statistics.

The major result from the discussion narrowed down to one word - COMPARABILITY.

Do we need European fire statistics and for what purpose? There are such facts present and used to compare fire death rates. Every year World Fire Statistics<sup>11</sup> publish such figures. Some of the participants agreed with the figures presented by the WFS, while others did not. Italy does not recognize the figures at all. In this project each national fire authority has given the number of fire deaths. But definitions of what should be included in the statistics vary. The World Health Organisation also collates similar figures. How can we understand the differences if there are no definitions?

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<sup>11</sup> Part of the Geneva organisation



To be able to provide reliable European fire statistics for an overview and the size of the fire problem we need national systems and:

- Agreement on the minimum requirements.
- Use of commonly agreed definitions.
- Emphasis on fire deaths, injuries and the total costs of fires.
- Comments and declarations from each nation.
- Agreed dates of delivery.

Statistics on forest fires are collected as there are EU regulations requiring them. We can provide these statistics ourselves with our own definitions. We can also try to cooperate with World Fire Statistics, even if their task is wider than Europe's.

## Annual fire status report

### **General findings from the answers**

In the answers we find a common need for more exchanges of information between countries. Which can be new legislation and the reasons behind such changes. Other topics can be to find best practice and new ideas.

## Conclusions from the workshop

**Annual sharing of information between nations** is a way to learn and exchange knowledge. Besides national statistics you need information on trends, problems, best practice, good examples and about new or planned legislation. The sharing of such knowledge can start with small ambitions and be built step by step. Any written information shall be simpler than the questionnaire in this project. A network is one way to share information.

## From the workshop

### **Discussion items:**

- Is there a genuine need for such a report?
- If the answer is yes – which topics should be reported?
- Should a report have some formal status?
- Could there be another system for exchanging experiences?

### **Results from group discussion**

There is a need for more cooperation among national fire safety authorities. Cooperation that deals with more than just statistics. It is very to be aware of the background to such facts and figures and their interpretation. A national general report can include:

- Information and background to statistical data
- Fire safety experiences and results
- Lessons learned and experiences from fires
- Best practice
- What is going on?
- National conclusions
- Planned alterations and programmes
- Main problems and trends

- Actions or reactions after major fires.

How should a report be produced? It should be simpler than the questionnaire used by the project. This report is of great value but will be too heavy to update every year since in many cases several agencies need to be involved. An annual report must be of high quality. The workshop earlier found that the national statistics could be improved so it may be hard to make a high quality report in the near future.

It will be a long process, a start for the future and carried out step by step to create something within 3 to 4 years. We should not be too ambitious and we should start at a low level. The matter should be raised in each country to create awareness on the importance of national reports.

In this matter the EU can give guidance. The Commission can provide an explanation on the importance of such reports as a means to exchanging experiences and to cooperation. The EU can also act as coordinator even if the Commission is not the primary receiver of this information.

Regular meetings, such as this, are another way of sharing that information. The proposed network can handle some of these questions

The EU just needs some major facts that can give an idea of the fire problems. The quality has to be high.

The European Commission's Joint Research Centre arranged, in September 2003, a seminar on "Lessons learnt from fires in buildings"<sup>12</sup>. From those lessons we find that new rules often comes after big fires. Mistakes have occurred in all phases (*prevention, planning, response*) and are found in different areas (*technical, organisational, behaviour*). Mistakes happen in many sectors (*building, owner, occupants, fire brigades*) and severe fires occur both in old and new buildings.

## Answer from countries

### Austria

There are no real statistics and reports. Notes from visit; there are differences among the states. A new system is being developed for Vienna.

### Belgium

How are the statistics from fire brigades collected?	There will be an annual report completed by fire brigade and send to SPF Interior
Is it mandatory to compile these statistics?	No
How are the statistics presented?	No compilation today / (data base and annual report)

At present time no statistics are made on a national level. A study is on the way to make statistics. Local fire brigade investigates almost all fatal fires. Reports are sent to SPF Interior but reports aren't stored on a database

<sup>12</sup> Report EUR21006EN "Lessons learnt from fires in buildings" Editor Javier Hervás

Some fire brigades take part in an experimental plan for risk analysis by area. These information's will be interesting for a future reform of fire brigade and to measure really fire risk

## Denmark

How are the statistics from fire brigades collected?	There is a standard format. Figures are submitted by the fire brigades to the Danish Emergency Management Agency once a year. Approximately 60% of all fire brigades give us more detailed information than required by law. The system will be changed in 2005.
Is it mandatory to compile these statistics?	No
How are the statistics presented?	In annual reports from the Danish Emergency Management Agency. Local calculations can be made with DEMA programmes.

The statistics are primarily used to provide facts for information about the Danish Emergency response due to fire. On a long term they will be applied for finding trends and making analysis within fire prevention work. New methods to provide fire-cover by risk assessment requires better statistics.

The insurance companies also make some statistics but a big part of these data are not available. There is also some work on this item in Copenhagen Fire Brigade where they have good cooperation with the insurance companies.

See above question. We also cooperate with insurance companies to obtain information about the total cost of single fires.

## Finland

How are the statistics from fire brigades collected?	Fire brigades fill in report forms of each individual incident. The forms are filled in and collected via a web-based computer system and the same system allows fire brigades and central authorities to generate statistics.
Is it mandatory to compile these statistics?	Yes, based on Rescue Services Act: "The municipal rescue authority shall submit information on the outputs, resources, arrangements and other preparedness of the rescue services as well as on facts registered in the register of measures to the Ministry in charge of rescue services and the State Provincial Office for statistical purposes."
How are the statistics presented?	Fire brigade, municipal, regional, provincial, national, etc. level data is published in different articles, reports and studies and covering a variety of matters. In future Ministry of the Interior will publish annual statistics publication.

The data are used:

- for local risk analysis work
- for general follow-up
- to identify high incidence of certain type of accidents, sources of ignitions, etc.
- to monitor trends
- to evaluate and develop legislation, programmes and major activities.

Surveys on attitudes and awareness are carried out regularly. The latest is from 2002 and covered issues such as what accident risks people are most concerned with and how well people consider local rescue services operate.

There is no centralised system for providing data on accidents. Altogether the data is quite fragmented as several bodies collect their own statistics using different methods. Statistics from other governmental bodies as well as from national statistics body have data on e.g. accidental deaths, industrial accidents and traffic accidents. Insurance companies have the best data on material losses. And so on.

The full potential of the data is still to be discovered. Academic institutions regularly use the data in research. Fire brigades are becoming more acquainted with the possibilities, as the new risk analysis system lies very much on this data.

## Germany

How are the statistics from fire brigades collected?	Common forms are being used by all states, however the collected date in part is different from state to state. Germany does not have a common statistic from the fire brigades. States collect the reports on an annual or monthly basis.
Is it mandatory to compile these statistics?	No
How are the statistics presented?	Local statistics are published by the municipal fire brigades. Normally the states release an annual press statement covering the fire brigade statistics

Statistics on operations of the fire brigades are utilized to determine trends. Especially the splitting between the tasks of fighting fires and the tasks of technical service. They may be utilized towards the required equipment. They are especially useful for mission planning and cost analysis of full time fire brigades. The statistics of the 16 states are not uniform and contain only little common and comparable data. The statistics are not sufficiently differentiated to arrive at qualified results for fire protection. As a rule the states publish fire brigade operations statistics only annually.

All fires are inspected solely by the criminal police, fire brigades do not always receive the results.

There are further sources with the German insurance industry, they compile statistics to their own criteria.

The Association for the Advancement of Fire Protection” (VFDB), a lobbying group of the fire fighting industry and the fire brigades currently construct a digital data bank and a statistical analyzing system. The names are InterSTRES and STRES. This system – which is supposed to be applied nationally – involves primarily the full time fire brigades and the large volunteer fire brigades. The system allows for benchmarking among the fire brigades.

For the most parts this is not used for analysis or in fire prevention efforts. The exception is several large full time fire brigades that maintain extended statistics and thus obtain qualified information on fire prevention.

## Greece

How are the statistics from fire brigades collected?	There is a standard format. Data are submitted by the fire brigades to the Directory of Informatics of Hellenic Fire Corps Headquarters (H.F.C.H.) every day.
Is it mandatory to compile these statistics?	Yes.
How are the statistics presented?	In annual reports from the Directory of Informatics of H.F.C.H. Local calculations are made.

The statistics are used to find trends and to provide facts for information. They are rarely detailed enough for use in the drafting of new regulations. They are also used by the Union of Greek Insurance Companies.

Every fire is briefly investigated by competent local fire brigade. Reports are sent to the Directory of Informatics of Hellenic Fire Corps Headquarters (H.F.C.H.) and stored on a database from which an annual report is produced.

In serious fires and if required, fire officers get information from police officers in order to find out arsonists.

In large and serious fires there is often an involvement of fire experts who produce a scientific report about the fire, the damage and the reinstatement of the damaged structures.

There is no special analysis. Only academic researchers try to make analyses, although the data is not usually adequate for this task.

Data is provided to other organizations such as the Civil Protection Authority for further processing.

## Ireland

How are the statistics from fire brigades collected?	Fire brigades compile and send annual returns to the Dept of Environment and Local Government, which publishes an Annual Fire Statistics Bulletin. Some fire authorities have access to computer generated management information, which facilitates statistical reporting, but this is not universal yet.
Is it mandatory to compile these statistics?	Yes. Section 34 of the Fire Services Act, 1981 states: <i>"It shall be the duty of every fire authority to furnish to the Minister such reports and statistics on fires occurring in its functional area and on fire safety inspections and related activities as he may require"</i> . A National Fire Incident Report Form was developed in recent years to facilitate computer-aided recording, but there are still some practical difficulties with the collection and compilation of statistical returns.
How are the statistics presented?	The statistics are presented as an annual publication. (Copy of 1999 Fire Statistics supplied, Statistics for 2000 available on DELG website <a href="http://www.environ.ie">www.environ.ie</a> )

The review report (2002) has highlighted the under-developed state of fire research in Ireland. There is little or no fire investigation work, other than police investigations which are undertaken to determine if a crime has been committed. The feed-back loop which should exist between fire events and the fire protection in a building has not been developed. Some efforts to improve this situation have been slowed down by industrial relations issues.

Statistics from fire brigades are compiled on an annual basis as described above. There are recognized limitations in the present systems.

One area where there is positive work is the reports on fire fatalities. Each fatal incident is reported immediately by the relevant fire authority. Data from newspaper reports of fire fatalities and fire related data from the national death statistics compiled by the Central Statistics Office for the WHO are also taken into account. Any trends or patterns observed are used to inform the National Safety Council's publicity campaigns. The NSC is currently undertaking a detailed research on the fatalities data to improve understanding of causes and circumstances of fatal fires.

The police investigations of fires might provide a source of information, but this is undertaken to inform court proceedings or coroner's inquests on deaths and is not readily available, or in a useful "lessons learned" format.

The published statistics are sometimes used in research by academic institutions.

The available data was utilized in the Review Report (2002) for international comparison purposes. The limitations of available data and comparability of data, Irish and international were somewhat evident.

## Italy

How are the statistics from fire brigades collected?	By intervention reports of the leading fire fighters ( Fire Officer or Sub Officer or Team Leader)
Is it mandatory to compile these statistics?	Yes, it is mandatory
How are the statistics presented?	By standardized forms of intervention report,

The reports and statistics used for the purpose of internal monitoring, distribution of the fire fighting resources and for fixing the priorities in activities of making rules.

Bulletins and statistics are also used and transmitted to the National Fire Brigade peripheral offices, which, together with the local authorities, are responsible for the political and administrative management. Besides that, the official site [www.vigilfuoco.it](http://www.vigilfuoco.it) includes a web page called "Joint safety – Fire Prevention" and provides information.

Data are available to other Administrations for the purposes foreseen by the law.

## Norway

How are the statistics from fire brigades collected?	On standard formats. Figures are submitted continuously to The Directorate for Fire and Electrical Safety (DBE)
Is it mandatory to compile these statistics?	No. But 100% of the fire brigades are reporting, and close up to 100% of fires and incidents are reported. The system has been in function since 1986. It is mandatory for the police to provide DBE with data on accident causes, and it is mandatory for some branches of industry to report on accidents within own premises/activities.
How are the statistics presented?	Annually in reports and on <a href="http://www.dbe.no">www.dbe.no</a> by DBE. Data on fatalities caused by fires are continuously registered on the web.

DBE began in 1986 the systematic collection and registration of data on fires and other accidents/incidents to which the fire services were called out. Municipal fire services are required to report to DBE, so in effect the national fire statistic is based upon reports from all municipalities. In addition reports on accidents involving explosive and flammable goods received from industrial enterprises and police authorities are included in the statistics. In order to supplement information from the fire services, information from the insurance branch containing figures on insurance damage payments over a certain sum is registered. Further, the police authorities report causes of fire found during investigations. At present, we can tie the causes of fire given in the police reports to approximately 70 per cent of the fires reported by the fire services. Insurance companies provide DBE with the total sum of losses but not for separate companies or single fires.

The fire services submit information on four individual report forms:

- **Call-out Report** is to be completed after all call-outs and other assistance rendered. It is primarily an internal report for use within the local fire service.
- **Report on fires in buildings** is to be completed after call-outs to buildings, aircraft and ships. The report shall be sent without delay to DBE following the call-out with a copy to the district police authorities. The report shall contain information, which can identify the fire with date, address etc. The following is described: conditions surrounding call-out and other assistance rendered, suspected place of origin, where the fire was extinguished and what stopped the fire from spreading. Further, whether the technical equipment at the scene of the fire was mounted and if it functioned satisfactorily. Any deaths and injuries with given age and gender, and the estimated sum of damages caused shall be included.
- **Report on accidents involving the transport of dangerous goods** is to be completed after call-outs to accidents involving dangerous goods, which occur on roads or railway lines and shall be sent without delay to DBE. In addition to identifying the accident the report contains information regarding driving conditions, type of transport vehicle, type of accident and the supposed cause. Information concerning the type of goods/product involved and the extent of damage shall be described.
- **Quarterly report on call-outs and other assistance** is an accumulative report, which is submitted to DBE at the end of each quarter. Described are situations, which have not been covered in the other two reports. The report is not detailed, but states the number of call-outs to traffic accidents, fires in motorcars, ambulance commissions, etc.

It will always be a matter of judgement as to whether one should request extensive and detailed information with the risk of receiving fewer reports contra less detailed information resulting in a larger number of reports being submitted. In Norway, we have chosen to compromise. We request relatively detailed information regarding fires in buildings and accidents involving the transport of dangerous goods, but a statement of the number of call-outs for other types of assistance is sufficient. After 16 years, the system is well tried by the local fire services. We estimate that the number of reports submitted to DBE is approaching 100% coverage.

The fire services use the statistics first and foremost to document their own work and to compare their operational costs, number of call-outs etc. with other municipalities. The statistics are also taken into consideration when establishing municipal fire ordinances and when deciding which resources are necessary in the fire service.

DBE publishes yearly extensive national fire statistics both in paper and on the web.

There is a great challenge to make optimal use of the information available in the data bank. We have for many years collected and analysed fire data and regularly published descriptive statistics. These give a useful foundation for decision-making and are often used in connection with public relations work. They have also been used to a certain extent for running statistical analyses, but there is a great potentiality for wider use. Improvement and development of the statistics system is on-going with continuous efforts to improve quality and reliability.

## Portugal

How are the statistics from fire brigades collected?	After each fire event. The fire brigade do a report to the District Coordination Centre.
Is it mandatory to compile these statistics?	Yes
How are the statistics presented?	It is only presented to internal service and report to National School of Fire Fighters.

## Sweden

How are the statistics from fire brigades collected?	There is a standard format. Figures are submitted by the fire brigades to the SRSA every month.
Is it mandatory to compile these statistics?	No
How are the statistics presented?	In annual reports from the SRSA. They are also presented on a CD ROM. Local calculations can be made.

The statistics are used to find trends, compare different organisations and to provide facts for information. They are rarely detailed enough for use in the drafting of new regulations. They are sometimes used for cost-benefit analyses. Almost all fatal fires are investigated by the local fire brigade. Reports are sent to the SRSA and stored on a database from which an annual report is produced.

Around 30 brigades, with 40 trained fire officers, have been seconded to the SRSA's national fire investigation programme. Every year around 500 investigations are performed. The programme complements the decreasing number of police reports. The police only investigate if a crime has been committed or is suspected. The collation and analysis of the details of fires is conducted in order to increase knowledge about fires. Particular emphasis is placed on



investigating the development of fires, surveying, analysing, and suggesting measures to be taken as regards fatal fires, hearth fires, and certain other types of fires. The programme provides better knowledge about fires and their causes, and highlights dangerous or defective products. The results are made public and product manufacturers and other stakeholders are informed. Another positive effect is the presence of fewer “un known” causes in the general fire reports. The SRSA can also react to new fire risks using the network of fire officers on the fire investigation programme.

The annual cost for the program is around 0,3 M EUR. The program and the costs are justified by the national advantage of the results since some problems need to be handled on national or even international levels. Single brigades cannot find or identify fire problems from single products and the cooperation between its members and the SRSA has resulted in safer products.

A proposed new legislation will entail a mandatory basic investigation after all fires, and other accidents attended by the fire brigade. The idea is to use, beside other experts, the experience from rescue workers such as fire officers.

From 1999 there is a voluntary reporting system on fatal fires. They are reported by fire-brigades and the local police. Information is collected from the press. In this way we hope to find all those fires (incl some that fire-brigades did not attend). After some years there are now detailed information available. There is knowledge that helps with propaganda and information. One of the main conclusion is that the individuals we like to reach are hard to reach.

## The Netherlands

How are the statistics from fire brigades collected?	The Central Bureau of Statistics (CBS) who is responsible for the publishing of the statistics of the fire services has an electronic data processing system. Figures are submitted by the fire brigades every month.
Is it mandatory to compile these statistics?	To complete these statistics is not mandatory
How are the statistics presented?	The statistics are presented in annual reports ‘Fire Statistics’ from the Central Bureau of Statistics.

The statistics are used to find trends, compare different organisations and to provide facts for evaluation and information. We still have to adapt a habit of using the results: They are rarely used in the drafting of new regulations (smoke detectors are an example of exception). All fatal fires are as a rule investigated by the local fire brigade. Reports are sent to the CBS (our national statistics bureau) and stored in a database on which an annual report is based.

The Ministries, the Inspections of the Ministries, regional/local authorities, the **Netherlands Institute for Fire Service and Disaster Management** (training institute and a multidisciplinary centre of knowledge, different research institutes with experience on fire safety, etcetera will conduct research on the area of fire safety.

The annual CBS report does not contain recent information (it takes the statistics bureau approximately two years to produce the report) and lacks ‘depth’/detailing. Further analysing of the underlying data is necessary to gain a higher level of quality. To improve the meaning and usefulness of the reports in the fire prevention work the collection of data needs a further

shift of focus from the accidents themselves to their causes. The role of awareness and responsibility should receive special attention.

## UK

How are the statistics from fire brigades collected?	Via Statistical returns for each individual incident. The majority are completed manually and coded by central government input team who validate and quality assure the data. About 30% of the returns are collected directly from brigades - there is a modernisation programme in place which aims to collect 100% of data electronically by 2005/6
Is it mandatory to compile these statistics?	No, there is no legislation which sets out the collection, however there is an understanding between Chief Fire Officers and the Government whereby brigades provide data about performance.
How are the statistics presented?	National and brigade level data. Published quarterly and annually in the form of independent Statistical Bulletins, which are pre-announced 6 months before the publication date. Publications are available in both hard copy and on the ODPM website- further statistics are available on request. Data are also published in the form of Performance Indicators.

The data are used to develop and evaluate fire safety policy – location of fire, cause and source of ignition, age profile of casualties etc. Trends are monitored and projections for future level of fires, injuries etc are undertaken. The data are also used to identify areas of high incidence of fires and casualties with a view to narrow the inequality of where fires and casualties occur.

The reports and statistics inform the National Community Fire Safety Centre’s national campaign planning. The campaigns themselves are themed on the basis of Prevention, Detection and Escape. Recent national campaigns have focussed on smoke alarm ownership and maintenance, the development of home fire escape plans, the dangers of fires caused by chip pans and the dangers from smoking. The most recent campaign, run earlier this year, highlighted the danger from fire in the kitchen if distraction occurs.

Survey data on fires which the fire service do not necessarily get called to –

- Fires in the Home: “Findings from the British Crime Survey”;
- Attitudes and awareness to Fire Safety: “NCFSC: Attitudes and awareness Monitor”.
- Accidental injuries
- “DTI – HASS & LASS statistics”
- DoH – Hospital Episode Statistics (HES)

The National Community Fire Safety Centre carries out pre and post campaign research to determine effectiveness of individual campaigns; additionally it commissions an annual “Fire Safety – Attitudes and Awareness Monitor.

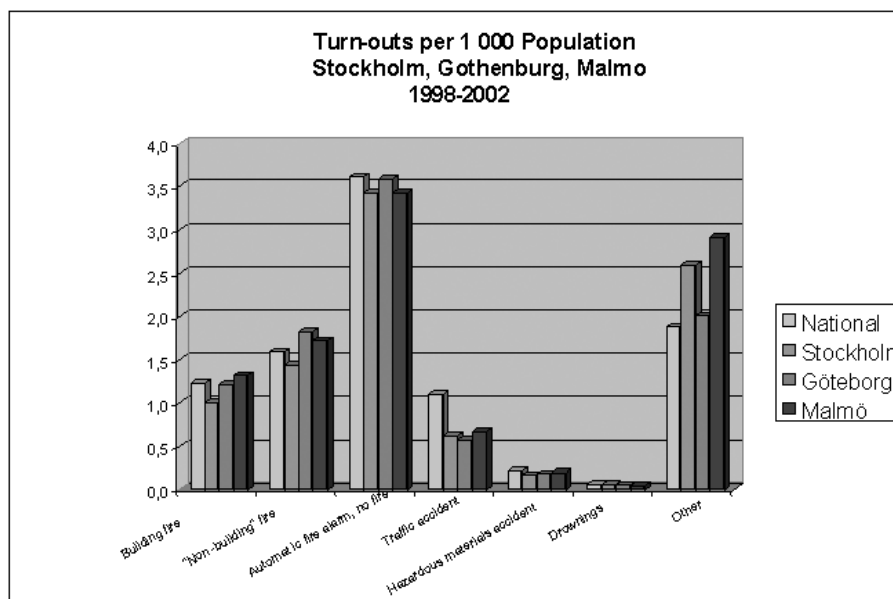
Data are analysed to look at development of fire and for some limited modelling purposes. Data are also used to support and develop fire safety campaigns – advertising, fire safety awareness etc and the effectiveness of smoke alarms/automatic detection systems.

Data gathered, also contributes to the determination and implementation of arson reduction strategies and to furthering of work in connection Health Improvement Issues and with Crime and Disorder strategies

To help draw together an overview of fire safety across Scotland a Scottish Community Fire Safety Group has been established. This group provides the basis upon which information is shared between the 8 fire authorities. Statistical information is also available from the Scottish Executive to support planning of fire safety approaches and with assistance of the 8 fire brigades, the Inspectorate and Fire Branch, a comprehensive approach is adopted to the development of community fire safety and fire safety generally across Scotland. Each authority is expected to produce a Community Fire Safety Plan and an inspection regime exists by the Inspectorate to identify performance outcomes.

More recent initiatives have included a data share project, which enables local authorities, fire authorities and other agencies connected with social improvement education and crime to pool data in local as a way of targeting improvements. In addition recent legislation has been enacted which has created Community Planning partnership deliberately designed to form bridging partnerships between various agencies with the express purpose of increasing community well-being.

## Using Statistics



**Oxford, Bonn, Gent, Salzburg, Alicante, Saloniki, Tampere ...**

*Local fire brigades can also use defined statistics. Picture from Max Ekberg, Malmö Fire Brigade.*

## 7. Incident prevention (excluding fires)

**Fire brigades and national authorities responsible for fire prevention often have good knowledge about the causes and effects of a large range of everyday incidents and accidents. The study will examine if and how this experience is used in prevention.**

**Describe the how fire brigade and any national authorities responsible for fire prevention are involved in general incident/accident prevention. Are any areas inspected besides fire safety?**

**Environmental and consumer safety can include fire prevention. How is this handled?**

### General findings

Fire brigade are seldom involved in general accident prevention. In some countries there are local and national initiatives. At the national level there seems to be a trend towards a broader approach in which fire personnel can become involved in a much wider range of activities.

When fire inspectors find problems besides the fire risks the responsible authorities are notified.

There is an awareness of environmental and consumer matters related to fire safety. But the study cannot conclude if this is the case with local agencies. Changes of focus from response to fire prevention will be a big and not so simple step. It can be even more difficult to focus more on other accidents.

### Conclusions after the workshop

Fire services have knowledge that can be of good use in **general incident prevention**. The experiences from response actions can be of value to prevent other day-to-day accidents. Some groups would benefit of a close cooperation with the local fire brigades. There are also good reasons for central agencies to cooperate in matter concerning environmental and consumer topics and injury prevention. A move into such actions is found in some nations. Since this can cost money for the fire services some legislative background can be necessary. This broadening of interests may also be a way to get better value for the money spent on the fire services.

### From the workshop

#### Introduction

Can our sector move from fire prevention to more general accident prevention and safety promotion? There are trends towards a broader approach and introduction of Community Safety programmes, sometimes called “Accident prevention”. An important target for cooperation in the prevention field is:

- to improve general safety consciousness
- to increase the appreciation level of accident prevention
- to develop a culture of safety in society

## Questions

- Is there enough cross-sector cooperation?
- Are there enough exchanges of experience?

## Results from group discussions

The role of the fire brigades in general accident prevention is expanding and the topic is climbing on the agenda. Experiences from operations are common since fire brigades deal with many different types of incidents, but that in itself does not make them experts. Others have the expertise and can be supported by our sector; and fire services often take part as experts in groups and committees. Working through other people also promotes fire safety. Some local communities are active in programmes like Safe Community<sup>13</sup>. Also some crime prevention, like arson programmes, is on national agendas.

The fire services have something to offer and some groups would benefit from that. Social workers need it. Other groups that can learn from fire fighters are found in industry, the traffic sectors and the tourist sector. Workplace and home safety are also areas that are approached with safety advice. Groups can be motivated to ask for advice from fire brigades.

It is a complex matter to start such cooperation since all sectors have their own rather narrow focus. Most of us can benefit from a broader view. In some cases national agencies have been brought together both to cooperate and to merge into new agencies given a wider scope. One single national agency is seldom appointed since safety matters are part of most areas.

The interests and priorities may sometimes collide. Money is often a matter since safety has a price. Safety requirements submitted late to the project entail further cost, and, even possibly, further problems. How much money do we spend and how do we know that the safety level is raised? What is the acceptable risk? The EU cannot define that.

There are also areas where national or EU sector ambitions or goals can be hard to combine. Environmental considerations are one area where there are several historical examples of conflicting interest: halons, freons, pvc, pcb and some flame retardants. Consumer safety is also an area in which the fire services have many interests.

More general accident involvement from the fire services may need some national legislation. It has to be financed. To widen the involvement someone has to start it off. And fire brigades can show the initiative.

## Answers from the countries

### Austria

The responsible authorities may rely to and consult the experts of the fire brigades. Besides fire safety hazardous materials are noted.

The responsible authorities may rely to and consult the experts of the fire brigades on environmental matters and consumer safety

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<sup>13</sup> A global concept from WHO

## Denmark

To our knowledge they aren't involved in work of that kind.

In most of the cases with conflict between environmental and fire prevention considerations, a compromise is sought. Consideration of consumer safety is solely placed in National Consumer Agency of Denmark.

## Finland

Through local and national campaigns, working groups, programmes, etc.

Fire prevention and other accident prevention and safety promotion are often dealt with in an integrated manner. Even the legislation does identify this, as there is no mention of fire prevention anymore but only accident prevention as one task of local rescue services.

Dangerous substances, general accident prevention, civil defence shelters are inspected.

## Germany

Occasionally workshops are conducted and the various authorities may participate. In case of larger cities the operational levels may cooperate. A general systematic coordination and cooperation does not exist. The authority responsible by law manages communication and cooperation with other authorities.

Once problems are identified that are within the responsibility of another authority, the responsible authority is notified.

Germany has many and strict environmental laws. Environmental protection and fire protection often interact. The early banning of halons as a fire retardant is one example. Environmental policies often prevent the use of fire retarding material in plastics. In case of fires, these products have various effects. They do reduce the incidences of fires, but in case a fire does occur, they release toxic gases.

## Greece

Fire Brigades are mainly responsible for fire prevention. For the prevention of incidents or the decrease of results of incidents not concerning fire (such as floods, earthquakes, etc) the competent Authority informs the public. However, Fire Brigades are involved in many other incidents/accidents for salvage operations

Greek fire officers inspect fire safety. If a problem not concerning fire safety is detected, then the competent authority is informed.

Environmental and consumer safety related to fire prevention is handled indirectly by the restriction of smoke spread. In addition, the burning of rubbish and waste products near forest areas is forbidden. EC sign of different building products includes both environmental and fire requirements.

## Ireland

The National Accident Prevention Committee of the National Safety Council, involving health services, fire services and organisations for the elderly, has instituted some pilot projects on accident reduction. Fire prevention officers contribute to these in their area. The

health authorities have also undertaken studies on accidents that result in persons attending accident and emergency services in hospitals.

An interdepartmental committee on Public Safety considered and reported on public safety in general in 2002.

Some fire officers are responsible for implementing the full range of building regulations.

The EC Recommendation of 22 December 1986 on hotel fire safety was one of the few initiatives driven from a consumer perspective. Ireland incorporated this recommendation into the "Guide to Fire Precautions in Existing Hotels, Guesthouses and Similar Premises" published in 1989 (copy supplied). Ireland has also contributed to the APAVE study (1996) on implementation of this recommendation in European Countries.

## Italy

The National Fire Brigade acts by force of law as far as prevention is concerned, otherwise, in case of imminent technical danger, upon indication/advise by any element of society.

The National Fire Brigade also acts, when so required by the judicial authorities, as technical adviser for the judiciary authorities themselves. In case of technical accident, the Fire Brigades can take on some powers conferred to police forces for the fight against crimes (carrying out scientific investigations, interdicting access to areas, collecting samples, making interview, and so on).

Besides fire safety there are inspections on - work place safety and explosion risks; in places where panic can occur (theaters, discos), overcrowding. Another kind of inspections are those carried out after natural disasters, in order to assess the safety of buildings. This is a typical activity (and difficult, because of the responses provided in hard circumstances and in a short time) carried out after earthquakes and floods.

As to environment, the Ministry of Environment is the highest authority responsible, and on its behalf the national and regional authorities for environment. The Ministry of the Interior has a useful assistance relationship with the Ministry of Environment at central and local level on matters of common interests. However, Fire Prevention rules have always considered the safeguard of environmental risks that can be caused by fires. For example, the above-mentioned Ministerial Decree dated 31 July 1934 already contained rules concerning mineral oil depots for the environmental safeguard. The cultural updates were, and still are, introduced in the fire-fighting regulation.

The Ministry for Production Activities is generally responsible for the consumer safety. Since the most important information concerning trade of hazardous goods comes from the controls carried out by customs authorities, Italy has established a Rapid Exchange System, which involves a number of ministries. Last, but not least, the National Fire-Brigade offers a free technical advise to all State Central Administrations in their fields of activity, and therefore also in case of consumer protection from fire.

## Norway

Fire brigades are only to a small extent involved in incident/accident prevention beyond fire prevention, and then often locally defined (for instance lending swimming belts to the public in the summer).

The Directorate for Civil Protection and Emergency Planning (before 1. September the Directorate for Fire and Electrical Safety) has a wide range of responsibility concerning public safety (ref. the description of DBE on page 1, or the description given below).

Besides fire safety the following areas are inspected; Electrical safety (power plant, distribution networks, industry, residential, health care facilities (including hospitals), ships, oil-installations), consumer products (both electrical and non-electrical), toys, playgrounds, consumer services etc

On national level synergistic effects between consumer safety and fire prevention will be found caused to the fact that the Directorate for Civil Protection and Emergency Planning cover the fire prevention area and parts of consumer safety (products and consumer services). Work is under way to try to find similar constellations on a regional level. The latter includes also environmental safety.

## Sweden

There are some local accident prevention programmes and in some cases fire brigades are involved.

On January 2002 the responsibility for the Swedish Safety Promotion Programme (SSPP) was taken over by the Swedish Rescue Services Agency (SRSA) from the Swedish National Institute of Public Health.

In virtue of new legislation on protection against accidents the traditional role of the SRSA – risk management and the fire & rescue services – is being integrated with public health issues.

The aim of the SSPP is to invest in local models for prevention work in a cross sectoral perspective, combined with a national strategy of collaboration between authorities. Within the Programme we have drawn up strategies to support safety processes at different levels and in various arenas. This is achieved by for example close contact with the municipalities and county councils, with working groups, annual conferences and seminars, municipal based safety courses, improvement of methods based on quality management, research, information products, literature etc.

Programme activities will be more steered by demand and based on cooperation locally, regionally, and nationally. International experiences and initiatives regarding safety promotion are also important and will be taken advantage of.

### **A safe community**

Based on a Swedish initiative, the “Safe community” program was launched in 1989. The model for local safety-promotion and injury-prevention work forms an important part of a strategy within the Swedish Safety Promotion Programme and the World Health Organisation's (WHO) Global Programme on Accident Prevention and Injury Control.



The Government has instructed the SRSA to establish a Swedish National Incident & Accident Analysis Centre. The main purpose of which will be to serve as a cross-sector centre for competence within the field accident prevention, specialising in the gathering, analysis and dissemination of data related to incidents and accidents.

This Centre needs to cover some important areas, such as providing:

- overviews of information on accidents and assessments of the safety situation
- a basis for assessment of effect and costs of possible measures to be undertaken
- information on frequency and consequences of accidents
- basic data for setting priorities for and management of inspections, regulation etc.
- background material as a basis for conducting risk assessment at a local level
- supplementary information on geological, meteorological and population data
- development of common methodology and taxonomy for investigation of accidents
- training in methods for conducting incident/accident investigations
- warnings concerning risks for accidents and background information
- networks for authorities, research institutions and industry (stakeholders)
- statistical data for preventive and preparedness planning and measures
- When problems are found that should be handled by other inspections it is reported to the appropriate authority.

The SRSA feels there is a general need to be involved in discussing the fire performance standards of products. That includes fire problems around plastics. SRSA is responsible for auditing environmental issues (from accidents) as part of the national environmental objectives. There are many connections between fire prevention and environmental protection work. One of the national objectives is "a non-toxic environment" and a specific project is being run to reduce the need for environmentally hazardous flame-retardants. In order to promote environ friendly fire safety there is a cooperation with National Association of State Fire Marshals (US)

## The Netherlands

Ministry of the Interior and Kingdom Relations, The department of Disaster Control and Fire Services is the government authority with expertise on fire safety. The department draws up regulations and gives general advice, aimed both at regional and local authorities. Organising fire fighting and disaster response is a core responsibility of the local authorities. They direct tasks related to fire fighting and disaster response and control to fire brigades, police and medical services. When appropriate, they call for assistance, for instance from the Red Cross or rescue and environmental services. To ensure a fast and effective response to major accidents in border areas, the Netherlands has made agreements on cross-border assistance with Germany and Belgium.

The tasks of the local authorities of fire brigades are described in The Fire Brigade Act (1985). Even if there is no fire, the fire brigade still has the task of limiting and controlling the risk to man and beast in the case of accidents. If there is a danger of goods being damaged or destroyed, the fire brigade can also render technical assistance.

However, the fire brigade is activated not only in a calamity: together with other municipal services, it is an important partner in the prevention, limitation and control of risks. This is

done according to the links in the 'safety chain'. This chain comprises five links.

The first (proactive) link is the attention paid to safety aspects of the designs for large constructions, industrial sites, roads and tunnels. The second (preventive) link concerns such aspects as the materials that can prevent a disaster or limit its consequences. The third (preparation) link is the preparation of actual actions if a calamity arises, such as planning, exercise and the purchase of materials. The fourth (intervention) link is the actual control of a disaster, such as salvaging, extinguishing, detecting dangerous substances, and protecting the environment. The fifth (follow-up) link comprises the provision of care for victims and relief workers, the restoration of normality, settling claims, and a deployment evaluation in order to learn from the experience.

When problems are found that should be handled by other inspections it is reported to the appropriate authority.

Some fire safety demands for equipment and furnishings are taken into account in the Food and Commodities Act. Furthermore the Inspectorate for Health Protection and Veterinary Public Health conducts research into fire safety for equipment and furnishing. The Environmental Act contains some fire prevention measurements, mainly directed to the handling and storage of dangerous substances. Environmental policy aims on 'durable building' this means for example that materials used in buildings are not harmful for the environment and therefore less toxic when a fire occurs.

## UK

There is currently limited involvement, although there are proposals to change this.

General health & safety is monitored by the local authority, or Health & Safety Executive, according to the nature of the premises involved.

Environmental and consumer safety matters are not currently included in general fire prevention activities. Where appropriate they are handled by liaison between the appropriate government departments.

Scotland follows a very similar pattern to England and Wales. The program of community safety partnerships and community planning does create a higher emphasis on integrated working between various agencies and authorities. A consequence of this may well be a significant shift in role as identified within a recent independent review of the fire service, which suggest that fire service personnel could be engaged in a much wider range of activities.

## 8. European network within the field of Fire Prevention

The role for a network will be examined. Fire safety is an essential safety factor in buildings but also for many products such as toys, vehicles, electronics, furniture and cloths. There are several European and other international groups dealing with this issue and fire safety is handled in many Commission services with no single body clearly established to deal with “Community Fire Safety”. The study will examine the Member States and EEA countries expectations on such a body.

- What would be the purpose of such a network and what authority would this network have?
- How should such a network be organized?
- In what areas and fields should this network act? What should be the outcome from this work?
- Name some specific topic/project in the field of fire prevention that should be prioritised and lifted to a European level.
- Comment on and try to weigh up the pros and cons of such a network

### General findings

All countries developing this study support the idea of a “network”. It will fill a vacuum and besides the important co-operation it can put fire safety forward into a variety of areas and have some influence in different policy areas.

The group can be lead by a special Core Group and need a clear authorization from the Commission. The authority of the network will provide its recommendations emerging from a group of experts. With a modest permanent structure it can be hosted by a national authority that coordinate, facilitate and opens an information forum. In an initial phase the network can study national actions at regularly meetings.

## Conclusions after the workshop

There is no network among national fire safety authorities. Such networks are an important part of the European co-operation in other areas and there are several groups with fire prevention on the agenda working in Europe. Many of EU policy areas involve pieces of fire safety and fire prevention. Fire safety is a horizontal question and has to be handled and understood by many different authorities and services. Some of the questions are already handled in close European cooperation, for example matters concerning the Construction Product Directive, standard fire testing methods for furniture, information to the public and prevention of forest fires. But fire safety includes many elements that interact and are handled as a whole in the countries. They can deal with most problems but some topics have to be handled on EU and other international levels. A proposal to start a network has been supported by all participant countries. A voluntary network can start with support, in words, from the Commission. Sweden offered to continue the development based on the letter that the core group sent to the Commission in May 2003.

## From the workshop

### Introduction

Fire safety is a subject involved in many EU policy areas. Ernst Schulte and Björn Albinson illustrate this in a PM<sup>14</sup> with search results from the EU Commission. There are found fire topics, both small and large, on subjects such as responsibility, level of fire safety, fires in tunnels and hotels, consumer protection, blocked escape routes and flammable ski wear. Questions in the EU Parliament seem to come up after fires. Such topics are also present among EU research projects. Fire safety is a truly horizontal question. Most problems can and should be handled by the MS but some need to be tackled at a higher level. There are some unofficial groups/associations dealing with fire safety and prevention in the EU and Europe. Examples of such groups were presented at the meeting.

An example was presented from the **Community action programme on injury prevention**<sup>15</sup> that included a “Public health network” to:

- Bring together successful national activities, which have been positively evaluated
- Support the acquiring of better knowledge and understanding of dissemination of information
- Improve comparability of information
- Avoid unnecessary duplication
- Share data that has a high level of compatibility, comparability, and quality
- Provide, by 2004, a consensus on the minimum requirements on comparability
- Improve national data collection

### Advice from Core Group:

- Try to convince other EU bodies to consult the network.
- Get people to come to us (the network)
- Make the network known and visible, people need to be aware of it!

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<sup>14</sup> Summary of some questions/answers. Dated 2003-11-04

<sup>15</sup> Notes taken from Community action programme on injury prevention 2001 (DG G,G3)

- Provide us with a name.

A new group needs to be rather independent and report to several DGs and units and also receive questions from different Commission services. A network should not propose regulation - mainly encourage cooperation. Fire safety is a multidisciplinary area and needs to be so in the future.

## *Discussions*

UK: The UK answer in the survey is not relevant at this moment since the organisational structure in the country has changed. There is a group working with building regulations in the EU; and fire safety experts on building materials and construction have already been appointed in the UK. The UK favours a group of representatives from national governments in the EU dealing with a broader aspect of fire prevention and safety.

Ireland: Support the idea of a group to identify best practice.

Austria: Fire regulators group (FRG) deals with fire prevention, construction, and firefighting. They cover the whole field that we are aiming at.

Netherlands: FRG deals with the aims to keep up level of fire safety not the goals.

Norway: Need to separate fire prevention into technical and behavioural sides. We are not aiming to intrude in the FRG area. We will cover the other part. Some EU support is needed.

Ireland: Should be a governmental group. We have highlighted some very important issues to work further on.

Sweden: Commission support is important and needed. National financing is another way of working.

Ernst Schulte: EU can never give this task to a non-governmental group. The questions are handled by the member states. This type of group cannot be financed through the commission in this form. One way to deal with it is through the coming “Call for proposal” and to start a new project.

Netherlands: Is there room in one of the existing groups? Why not the FEU<sup>16</sup>? They can get a mandate.

Sweden: The FEU does not representing government officials.

Netherlands: Delegating the responsibility to the individuals in the FEU can solve that.

Italy: Supports The Netherlands – the proposal can be solved in some existing group. In Italy the national agency and FEU work together.

Norway: What is the purpose of this group? What should they do more than sharing information? Should they develop something together? The Nordic countries have a group

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<sup>16</sup> Federation of the European Union Fire Officers Associations

today working with exchanges of knowledge and good practice. There is however no established group working between the meetings and no continuous work. The leadership rotates.

Netherlands: The FEU is not the right group at the moment but the question should be asked. They can be a first step. We have nothing and need to build up something new.

Italy: New member states upcoming? FEU has opened doors to some Eastern European countries.

Sweden: We cannot give a mandate to an interest group to be our official spokesman. It has to be a governmental formation.

Ernst Schulte: The civil protection unit cannot choose others than national agencies. We search for a system. The group has initially to be formed and financed/supported/proposed by the Member States. What can you ask the FEU to deliver? They also need financial support. A virtual network can be used for a start. The Commission can recognize a voluntary network by words. The Commission will most certainly react/respond to such a group. Such initiatives are appreciated.

Sweden: Is interested to prepare and to start such a group and will finance its part in such cooperation. Participation can be on a voluntary basis meaning that every MS has to join and pay its cost. Only governmental representatives should be invited and all MS and EES states are welcome in a group. Topics can be compared, and someone can prepare questions and report. We can share ideas, problems and experiences.

Netherlands: What is voluntary? (*Björn: Agencies participate out of interest and pay their own costs*). If some of us start, progress is showed and others will follow.

UK: Supports this idea. Governmental support and mandate is essential. Outside experts can be used on special issues. Only governmental agencies can speak for the UK.

Ernst Schulte: No one can reject this. The CIRCA system can work as a good information/communication channel for a network.

Italy: Supported that idea.

Netherlands: Be a little more precise on the network – the aims and topic. Describe different examples of solutions that we have to respond to and to discuss at home.

Sweden: There are ideas from the Core Group and in the letter to the Commission. They can be developed more as we have now agreed on a voluntary network. But it will take some weeks. Presentation can be made at meetings with FEU, CTIF and others.

### **Agreed conclusion**

Sweden will continue to prepare this matter. The EU will be recommended to support this by words. The EU CIRCA system and the normal mailing system will be considered as a means of communication, as well as meetings.

Ernst Schulte: That group can be referred to and request can be sent to such group. It can be a platform and one of the main outcomes. Make it more concrete.

## Answers from the countries

### Austria

#### **Purpose?**

The purpose of such a network would be on one hand similar or common fire safety level within the participating countries. On one hand this is reasonable for consumer protection. Standards for consumer's products (e.g. vehicles, furniture), for accommodation (e.g. hotels) and means of transportation (e.g. trains) will ensure a certain safety level. On the other hand standardization of the fire safety level of buildings will result in similar basics for economic competition.

But such a network would also have the big advantage of exchange of experience and knowledge.

#### **Organized?**

Splitting of the work items and regular meetings. The acceptance of the recommendations of the network will be a problem. Probably all the member countries of the EU should be involved.

#### **Specific topic/project**

Fire safety in means of public transportation, fire safety in public buildings and hotels.

#### **Pros and cons**

Such a network would result in exchange of experience and knowledge.

The acceptance of recommendations by the European countries could be a problem.

The members of the network should be experts. The number of the members of the network should not be too big in order not to lose the competence to make decisions.

### Belgium

Circulation of expert advice and to take advantage of other's experience

### Denmark

#### **Purpose?**

Shared knowledge and statistics is an important basis for improving fire safety in a rational way. As the European standardisation improves, it becomes more important to follow up on the effect and to cooperate on EU-level with the industry and other commercial stakeholders.

The present co-operation on fire prevention matters between the five Nordic countries is considered very useful and valuable.

The result of the proposed network would be a mutual raise of fire safety in all partaking countries, as experience from one or several countries can be made useful to all.

It should, of course, be carefully investigated to which degree such co-operation is already taking place on official and unofficial basis, e.g. NEDIES, MARS, CEN, CTIF and CFPA.

### Finland

We can certainly support the idea of creating a network between Member States' authorities. Yet at this point when there is no fire prevention theme at the European level it would be best

to first create a better picture of the whole situation and identify what, if any, needs there are for enhanced cooperation. To be able to identify these needs it would be useful to have a comparable description of the situation and policies in Member States.

The network could analyse and spread information and knowledge on fire safety at Community level. Main objective could be to improve the knowledge base in the area of fire safety. Better knowledge base would allow for identification of specific sectors and risks where Community standards could be necessary for supporting national measures.

At the initial phase it would be better to emphasise surveillance over action. One objective could be to exchange information on policy and regulatory developments and the results achieved in order to promote Member States' efforts in this field.

We do not have any real data on fires in Europe. It is almost impossible to make cross-national comparisons on e.g. fire deaths. Data gathering is an area where there could be common interests. Comparable data would provide information to fire authorities but also to politicians, legislators and other decision-makers.

## **Germany**

### **Purpose?**

An essential purpose of a European network would be a regular fire prevention standards experience exchange at the expert level. The goal should be a harmonization of standards. The creation of harmonized evaluation and analysis procedures covering large fire events in buildings. The central exchange of results in a network. The bringing together and possible optimizing of research results serving to improve the protection of the citizens of the EU member states.

The association of the construction ministries of the states, ARGEBAU, coordinate Germany wide fire prevention standards for buildings and recommend these for state legislation. The coordination is influenced at times by current construction trends, the impact of the fire protection community in the association is not of note.

In view of these structures the authority of such a European network would be minor in Germany. There are many competent partners but no central partner with a national competence and influence within Germany. Nevertheless coordination could be accomplished through a point of contact authorized by the Conference of Interior Ministers. This procedure however still must be cleared.

### **Organized?**

A core group (possibly comprised of one to three EU member states) should provide the business office for the network. The participating EU member states should name coordination / expert teams which should not be limited to fire officers but also include scientists. These teams should have joint activities to arrive at goals. Particularly research should be centralized and optimized and the results published.

The core group should place an information forum into the internet. The EU member state teams meet regularly to exchange experiences and to evaluate results.

### **Areas and fields**

*Activities proposals:*



Development of harmonized engineering methods for fire protection, harmonized analysis and evaluation methods for fire events, fire causes research (effect of mobiles on fire origins and spreading), determining minimum standards for fire safety inspectors, library of applicable literature.

*Outcome:*

The results should be recommendations to EU member states which will result in national regulations. European level influence on possible harmonized construction standards. Special fire events in the states result in lessons that are provided to member states in a standardized way. Construction of an information and consulting platform.

*Specific topic/project*

- possible special material requirements for cases of electrical equipment
- harmonizing targets for fire safety in buildings within the EU
- more safety in private residences and residential buildings, protection from smoke development in buildings
- optimized relation between construction related and operational fire protection measures and the response times and performance of the fire brigades, as a goal to protect people in the EU.

**Pros and cons**

From a German viewpoint it is not easy to provide an evaluation. Certainly there are more advantages to such a network for the German fire protection system. In recent years it had to suffer a slow degradation. The reasons her fore were economic ones but also political considerations.

On a positive side would be a broader foundation for fire prevention measures and possible political pressure from the EU to realize better standards. The concentration of research could also provide economic advantages. Subjects such as fire protection in tunnels, large retail facilities / - parks are subjects that have many interested persons in the EU. Joint solution strategies to serve as orientation standards would be an advantage.

A disadvantage would be primarily on the emotional level, such as potential loss of political influence of the German states, the uniform application of possible results because of the federal structures in Germany.

**Greece**

**Purpose?**

It is a very good proposal mainly for co-ordination of the various activities concerning fire safety. However, according to our experience of so many bodies and groups involved in this topic, we would not be so optimistic, if there is not a clear task and a strong authorization of this new European network.

**Organized?**

In two divisions:

A Fire Committee, with 2 members from each Member State (fire design expert, fire regulator)

The Board which will take decisions on the proposals of the above Fire Committee.

**Areas and fields**

European Fire Regulations

Fire Prevention

European Standard tests

Fire Safety Engineering

The outcome from this work could be summarized in co-ordination and harmonization.

**Specific topic/project**

Public education

Fire safety in the Higher Education.

Co-ordination and harmonization in the European countries

**Italy****Purpose?**

Generally, we identify the following priority purposes:

- To start common actions in those fields in which interactions among citizens of the various countries are higher due to the mobility within the Union, except for the responsibility (and consequently also the power) of each Member State as to the safety of the community,. This is the case of transport, for which it is necessary to work at international level.
- To produce a considerable amount of statistic data on fires, once the criteria for the data collection have been fixed.
- To prepare an international database, acknowledged by EU, of the released fire-fighting certificates for products.
- To cooperate with all those who are daily involved in the rescue and the fire-fighting activities and their associations, such as FEU – Federation of the Associations of EU Fire-Fighters Officers-

**Authority?**

We welcome the direct involvement of those Authorities that in each country are responsible for the citizens' safety. The Authority of the network should depend on the level of participation of the authorities themselves.

**Organized?**

Somehow, this network should be organized at the central level of the Union, with the direct involvement of the EU General Directions. Within the field of fire-fighting products, such a network could assist the development of the system of Groups of Notified Bodies, and especially by those notified for control activities, within a context of clear common rules.

**Areas and fields?**

As to fields of action, we confirm the priorities mentioned in other answers to the questionnaire.

As to results, the following two objectives are to be carried out: a) – coordinated actions by countries as to risks concerning the territory of several nations (for example: international highway and railway tunnels; international transport of hazardous materials; settlements at risk near boundaries or in areas that, in case of an accident, could involve other areas outside the national territory; commercialisation of products; etc.); b) – creation of complete data banks on accidents.

**Specific topic/project?**

We confirm the above-mentioned specific aspects, and in addition, the definition of common elements of safety management (maintenance, qualification of experts, ect.).

**Pros and cons**

**Pros:** the most important goal reachable in short time is that of fixing common statistical methods in order to compare the safety levels and to improve the knowledge of each of the many possible fire scenarios.

**Cons:** there could be an expensive commitment of human and financial resources that is worthy only if aims and timings are fixed. That is reported in order to guarantee useful results that reward the commitment itself.

**Ireland****Purpose?**

We would suggest that the primary purpose of a network would be just that – to enable the relevant experts involved in different countries to network about high-level issues. One of the key issues to address, as proposed in this project, is to identify trends and examples of good practice in the safety field. The network could also act as a resource in terms of collecting “lessons learned” reports on fire incidents.

We would suggest that the network does not need to be assigned authority, other than support to undertake its networking and to publish reports of its activities. The authority of the network would come with its recommendations emerging from a group of experts

**Organized?**

The main network should perhaps meet a few times each year. It could create sub-groups to consider and report on specific topics. The network would need a modest permanent support structure, which would organise meetings, write reports, keep a web page etc.

This type of support could be hosted by a national safety organisation (eg Swedish RSA), contracted on behalf the relevant EU institution. We would suggest the civil protection section DG XI as an appropriate section of the EU to host this network.

**Areas and fields**

See above. Initial meetings and the current preliminary research will bring forth the areas of common concern and potential priorities.

**Pros and cons***Pros*

Benefit to be obtained by involvement in international discussion and debate. It helps critical assessment of national policies and may inform future development.

It may also help to give a better profile to fire safety.

Fills a vacuum at the moment.

*Cons*

Requires a level of effort and input for it to be effective.

Might conflict with remits of other bodies?

## Norway

### **Purpose?**

The network should start being a forum for exchange of experience, ideas and good practices. Further ambitions will develop later. The network should consist of authority level experts. No authority should be necessary to the network itself.

### **Organized?**

One member state should be given the role to coordinate and facilitate.

### **Specific topic/project.**

Identifying trends and examples of good practice.

Mapping the need for fire safety research.

Discussing how to relate to the diversity of stakeholders and their responsibilities to fire prevention.

Discussing possible harmonisation of methods and measures of fire prevention

## Sweden

### **Purpose?**

No single body is clearly established to deal with the concept of Community Fire Safety.

Lack of Community co-operation makes it easy to challenge fire safety. A Community Fire Safety group can put fire safety topics forward. It could be a place for the circulation of expert advice within the Commission and for the collation/integration of fire safety issues in other areas. It will also be important for the cooperation between national authorities.

### **Areas and fields**

Product manufacturers normally argue to retain low price for their products, as they need to keep up with their competitors. Someone needs to argue for fire safety and some extra costs for that. This kind of network can take that challenge.

### **Specific topic/project**

A system for rapid response to fire problems caused by products

## The Netherlands

### **Purpose?**

A fire prevention network should start being mainly a forum for exchange of experiences, ideas and good practices. Its main objective should be 'spreading the knowledge through Europe'. Further ambitions will develop later.

### **Organized?**

One member state should claim the role to coordinate and facilitate. The rest will follow.

### **Areas and fields**

Prevention, safety awareness, tools for checking fire safety achievements.

### **Specific topic/project**

A specific project could be: 'to make civilians, private/public organisations and local authorities more aware of their responsibilities to protect themselves and/or the obligation to inform about fire safety'.

## UK

At present the UK is not aware of any pressing need for a European Network on general fire safety matters, as ensuring fire safety in the community is the responsibility of the member states. The UK is fully represented at European (and international) level in all major standards activity.

The UK interests in general matters related to fire safety in Europe are monitored by the Fire Safety Advisory Board and its relevant sub groups. In particular it has one sub group (the European Sub Group) that identifies all fire safety matters emanating from Europe and ensures that the relevant sub groups are aware of the activity proposed or underway. The relevant sub group then ensures that the UK interest in that activity is properly represented. *(This group does not longer exists – UK information at the workshop)*

*From UK mailing complementation;*

There is some caution about UK support for a working group on fire safety policy. However, there is not the same concern about a working group on more technically oriented matters relating to fire and fire safety, provided its business did not significantly overlap with existing standards and other technical groups on which the UK is already represented.

One way we feel the proposed group might be given clear distinction from others having not dissimilar interests would be if its membership were confined in the main to EU Government membership (ie in general no academic, professional or trade representation).

Provided the above distinctions were drawn, the UK would wish to be represented in an initially ad hoc group of European officials concerned with (mainly) technical issues relating to fire.

## Scotland

The overall view in Scotland is that response to EU requirements on fire safety is generally reactive. There is therefore a desire to improve this process by exercising greater influence over the EU's decisions prior to any Directive being issued. Support is given to the Fire Safety Advisory Board. Additionally, however, there is a belief that greater influence should be exercised through the EU at an informing stage, and you will be aware that the Fire Safety Advisory Board did support your project. This influence has also extended previously to mounting conferences on the discussion of community fire safety in Europe and support for the 112 emergency programme.

There is a belief that citizen safety still needs to be improved substantially, both in area of international travel and environment. A statistical foundation which provides better comparability and hence insight into best practice between European Member States would be particularly helpful. Progress has therefore been maintained in ensuring support through bodies such as CTIF and FEU to engender a proactive to the Civil Protection Unit, whilst maintaining the existing governmental links into the various general Directorates of the EU. Any proposal, which enhanced this influence in process, would be welcome.

## Proposed network or working group

Letter sent to European Commission, DG Environment, Civil Protection and Environment on 2003-05-20

### ***Suggestion form the major project Fire Prevention and other incidents – a new Working Group***

*At the Core Group meeting 26-27 of March 2003 all members (representing Finland, Norway, Austria, Ireland and the United Kingdom) explained that there is a need to establish a working group of experts in the “fire safety area” before our project has come to an end. This letter is sent on behalf of the Core Group.*

*We suggest the establishment of a working group of experts from competent authorities on fire safety under the umbrella of and hosted by Civil Protection unit. This new group shall mainly deal with technical matters relating to fires and not overlap existing standard and technical groups.*

*The Core Group had some ideas for a working group;*

- *The members of the group shall represent the Member States governmental authorities. No groups of professionals, trade or academic organizations will be involved.*
- *Shall consist of the Member States acclimated governmental expertise and be available for the Commission in all areas handling fire safety matters in broad aspects.*
- *Shall have some mandate and an accepted status*
- *Shall be able to raise the fire safety problem within the union and be a resource for others.*
- *The working group starts on a voluntary basis, can be permanent later.*
- *Can be a network for quick reactions on new problems.*

*We suggest that the Commission start a process in order to establish such a group. The Core Group and myself can support any such efforts. Our workshop in November will also deal with the topic. By the project has got the opinions from all participating member states and answers to some of these proposals will be a good base for discussions at the workshop.*

*Björn Albinson  
Project leader*

# Some ideas around a EU Fire Safety Network

*(The ideas will be developed further before a presentation at the Commission 26/27 of February 2004 – when the whole project is finalized)*

## *Members*

**All MS and EEA countries are invited as members**

**Only governmental representatives** should be invited

The network should, when needed, cooperate with other interest groups

Participation is on a voluntary base

## *Aim*

**Enhance and encourage cooperation**

**Become a consulting group within the Commission**

Become a forum for cooperation

To discuss similar or common fire safety issues

Forum for inter-national comparisons

Be a contact point for day-to-day questions

The group can promote fire safety

Become a forum for the early warning of fire problems with products

Become a fire safety profile within the EU.

## *Authorisation and presentation*

**A clear authorization is wanted from the Commission.**

**The network should report and serve several DGs and units.**

The EU Civil Protection Unit is asked to support the network by words.

The group needs to be rather independent receive questions from different Commission services.

The group should become known within the Commission.

EU bodies will recognise the competence and informal authority of the network based on how it deals with and responds to questions and recommendations.

Try to convince other units to consult the network. Make it known, visible and give it a name.

## *Administration*

**A modest permanent structure**

**One member state should be given the role to coordinate and facilitate and organize meetings**

**A core group should support and prepare meetings**

With a modest permanent structure it can be hosted by a national authority that coordinates, facilitates and opens an information forum

The coordinator needs to be supported by a Core Group

Someone appointed to write reports and update any web pages

Maintain a list of national authorities and points of contact

## *Founding*

**Agencies participate out of interest and pay their own costs** for travel and accommodation.

Members may also need to share the costs for meeting rooms and meals.

### *Steps in the development*

**The network starts as a forum for the exchange of experience.**

**Further ambitions will develop later.**

Initial meetings will bring forth the areas of common concern and potential priorities.

In the future it can propose, promote and coordinate questions in several countries.

### *Meetings*

**The network should perhaps meet a once or twice a year.**

**Most of the time should be spent on discussion.**

Prepare topics carefully and in advance.

Someone can be asked to prepare certain questions and to report.

Presentation of facts should mainly be made on paper

### *Handling of questions*

- **Handle only questions from group members or EU units.**
- When requests come to the coordinator they will be distributed to all members who are asked for opinions. Those opinions are collated. Answers given on behalf of the network are sent when the core group has accepted them. The coordinator prepares the matters to be discussed.
- There should be careful investigation regarding to what degree cooperation is already taking place on an official and unofficial basis on different issues. A new network should not overlap existing standard and technical groups. Fire safety is a multidisciplinary area and needs to be so in the future.
- Sub-groups can be considered and report on specific topics.
- The network and the mailing list can be used for questions to all members from all members.

### *Communication ideas*

**The CIRCA system can be a basis for sharing some information.** I guess mainly results and statements.

**Normal mailing lists will also be used** and updated and used as a consulting platform.



## 9. Overview of fire safety

<b>Describe the main legislation, national authorities and their responsibilities</b>
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### General findings

All nations have several laws to cover parts of what we call “fire safety”. There is normally a “fire law” that regulate fire inspections and fire response. To that come building laws.

Also laws for workplace safety, flammable liquids, explosives, major accidents, hazardous substances, environment, electricity, and consumer safety includes more or less fire safety elements. They also come from a number of EU Directives.

Those laws are supervised by a number of authorities. Fire brigades and national “fire authorities” are the local and central agencies that have the overview.

### Answer from the countries

#### Austria

The requirements in relation to fire safety fall on the one hand under the scope of the Austrian construction laws (Bauordnungen) and the Fire laws and on the other hand under the scope of the Austrian industrial code (Gewerbeordnung). The construction and fire laws of the 9 states differ from each other.

In the course of authorization proceedings of a building the authorities may consult the fire brigades and other experts.

#### Belgium

There are two levels in the Belgian legislation for fire safety.

In a national level: basic standards for new buildings, basic standards are the same for schools, hospitals, restaurants, ... These standards have five appendixes:

- 1 Terminology
- 2 Low buildings
- 3 Medium buildings
- 4 High buildings
- 5 Fire reactions

In a “regional / community” level ( 3 areas (region) and 3 communities) : each has an appropriate and specific legislation for (for example) hospitals, hotels, ...

Fire brigade makes fire building inspections. The fire brigades apply to enforce the national and regional codes. There are for some buildings in some region any rules. The fire brigades are organised on a local level (town, district, municipalities,...). The fire brigades depends on SPF Interior ( Service Public Fédéral). SPF Interior must to inspect fire brigades on various levels : fire safety, organisation, training, materials, staff ...

## Denmark

There are two main pieces of legislation for fire safety: the Danish Preparedness Act and the Building Act

### **The Danish Preparedness Act**

The Ministry of the Interior and Health (MIH) and the Danish Emergency Management Agency (DEMA) are authorities with expertise on fire safety. The Danish Preparedness Act entitles MIH to draw up departmental orders, which authorise DEMA to draw up regulations and general advice aimed both at individuals and authorities. The act includes rules for all kinds of rescue services, and the supervision of fire safety. DEMA is responsible for regulations for objects with special fire risk. The EU Construction Product Directive has been implemented in these regulations. The implementation of a reformed Preparedness Act is expected during 2003.

### **The Building Act**

In relation to fire the National Agency for Enterprise and Housing deals with building and housing. The Building Act entitles the National Agency for Enterprise and Housing to draw up building regulations. The EU Construction Product Directive and a number of various standards are implemented in the building regulations. The building regulations include fire safety issues. There is a separate regulation regarding chimney sweeping.

Local authorities perform most of the supervision and inspections.

## Finland

There are two main pieces of legislation, the Rescue Services Act and Land Use and Building Act, that cover fire safety. Based on these acts several more detailed decrees and orders have been issued. The Ministry of the Interior is responsible for matters dealing with Rescue Services Act and Ministry of the Environment for matters dealing with Building Act.

Rescue Services Act regulates responsibilities and tasks of local rescue authorities (fire brigades). It also has provisions dealing with fire safety. In those provisions responsibility for fire safety is placed both on the owner and the occupier of the premises. Local rescue authorities enforce these provisions. They have a major role in enforcement of other safety related legislation as well.

Land Use and Building Act together with Building Regulations lay down minimum design and construction standards for buildings. Fire safety issues are taken into account as part of the approval process. Local building control authorities enforce Building Regulations. Local rescue authorities are involved in approval process.

There are a number of provisions issued by other Ministries, which also have an impact on fire safety. Act on Explosive Substances deals with dangerous chemicals and explosives and lies under the responsibility of Ministry of Trade and Industry. Safety Technology Authority, which is a central authority, and local rescue services enforce that legislation. Occupational Safety and Health Act deals with workplace safety and lies under the responsibility of Ministry of Social Affairs and Health.

## Greece

**Fire Regulation** (Presidential Decree P.D.71/1987) consist part of the National Building Regulation. It has been introduced in 1987 and is covering all the new buildings and the existing hotels. Other “existing buildings” erected before 1987 follow various Fire Brigade rules and Decrees.

Passive fire protection is the part of Fire Regulation ruled by the Ministry of Environment and Active fire protection is ruled by the Fire Brigade.

There is additional fire legislation concerning special cases (e.g. oil refineries, natural gas installations etc.). This is mainly ruled by the Fire Brigade, but other authorities (Ministries of Transport, Education, Public Health etc.) are often involved as well.

## Ireland

There are two main pieces of legislation, the Fire Services Act, 1981 and the Building Control Act, 1990 which govern fire services and fire safety in Ireland. The Minister for the Environment and Local Government accounts to the parliament (Dáil) for fire safety issues, and is the sponsoring Minister for the legislation referred to.

The Fire Services Act, 1981 (FSA) established fire authorities (37 local authorities) and assigned responsibility to them for provision of fire fighting and other emergency rescue services. It also has provisions enabling fire authorities to enforce fire safety in buildings (all except single domestic dwellings). The Act very clearly places responsibility for fire safety on the “person in control” of a premises by way of a simple functional statement. A Licencing of Indoor Events Bill currently before our legislature is intended to extend and strengthen the range of safety enforcement powers of fire authorities, and to support good practice which has emerged.

The Building Control Act, 1990 and the related national Building Regulations make provision for setting of minimum design and construction standards for buildings in Ireland. The Building Regulations are performance based and comprise 12 Parts A to M, including Part B - Fire Safety. The Minister for the Environment and Local Government issues technical guidance on how to comply with the Regulations, including Technical Guidance Document (TGD) B (Fire Safety).

Developers are required to make application to the relevant Building Control Authority for a Fire Safety Certificate in advance of construction. The FSC confirms that a building constructed in accordance with the plans lodged with the building control authority will comply with Part B (Fire Safety) of the Building Regulations. The design is checked by the fire officers (65 officers with professional qualifications) and approved or rejected. This system has operated since 1992 and is regarded as a most significant step in improving the safety standards of our building stock. Domestic dwellings must comply with the Building Regulations including Part B, but an FSC is required only in the case of apartment blocks.

There are a number of pieces of legislation sponsored by other government departments, such as the Dangerous Substances Act, 1972 and associated regulations (eg licencing of petroleum stores) which also impact on fire safety.

## Italy

In Italy, law 1570/1941, subsequently amended by law 469/1961, assigns to the Ministry of the Interiors, through the National Fire Brigade, all activities related with fire prevention, fire fighting, and, in general, urgent technical rescue. By law, all technical provisions in the field of fire prevention are issued by a Ministry of the Interior decree, developed and approved by the Central Technical and Scientific Fire Prevention Committee, which is a body established at the Ministry of the Interior, consisting of central and local representatives of the National Fire Brigade, as well as of representatives from other ministries involved in safety matters, from class unions and from trade-union organizations. Technical regulations are coordinated by European Union guidelines through a specific office – Regulations, Certification and Control Area at the Central Direction for Prevention and Technical Safety of the Department of Fire and Rescue Services and Civil Defence – which maintains relationships with the community bodies for the purpose of the implementation strategy of the “New Approach” and subsequent directives. Moreover, representatives of the National Fire Brigade take part in the national (UNI and CEI) and European (CEN and Cenelec) normation processes.

## Norway

### **The Directorate for Fire and Electrical Safety (DBE)**

The Directorate for Fire and Electrical Safety (DBE) was established 1 January 2001 following the merger between the Norwegian Directorate for Product and Electrical Safety and the Directorate for Fire and Explosion Prevention. The new directorate’s area of responsibility includes fire-, explosion- and electrical safety, the land transport of dangerous goods, liquids and gases under pressure, product safety and consumer services. The directorate deals with matters which fall under: Act relating to the Prevention of Fire and Explosion Prevention, Act on Supervision of Electrical Installations and Electrical Equipment, and Act on Control of Products and Consumer Services. The Directorate for Fire and Electrical Safety reports to the Ministry of Labour and Government Administration and the Ministry of Children and Family Affairs. From 1 July 2003 DBE will merge with the Directorate for Civil Defence and Emergency Planning to a new directorate for public safety. This change in organisation will not for the near future affect what is commented in this document.

### **National Office of Building Technology and Administration**

The National Office of Building Technology and Administration serves as a link between the Ministry of Local Government, the building industry and the public. The office provides the authorities with better insight into matters affecting the building industry and encourages cooperation between the industry and the public sector. The office is responsible for administering and interpreting national building regulations, and has the authority to administer a centralized system of Approval of designers, constructors or controllers in the building industry. The office is also responsible for providing guidance and information concerning national building regulations. Furthermore, the office conducts studies to provide a sound basis for revision or simplification of the regulations.

### **Act relating to Fire and Explosion Prevention**

Act relating to the Prevention of Fire, Explosion and Accidents involving Hazardous Substances and the Fire Services’ Tasks in Rescue Operations (Act relating to Fire and Explosion Prevention) was passed on 14 June 2002 and came into force 1 July the same year. The Act is a new and modern tool for the performance of fire and explosion prevention work both at local and central levels. This covers both preventive and preparedness and response

measures in the areas of fire and explosion including the safety aspects connected to the handling of hazardous substances and the transport of dangerous goods.

#### **Act on Supervision of Electrical Installations and Electrical Equipment**

The act covers all electrical installations and equipment (except radio telegraphy and radio telephony).

#### **Act on Control of Products and Consumer Services**

The purpose of the Product Control Act is to prevent products from causing damage to health. (A further purpose of the Act is to prevent consumer services from causing damage to health.) This Act applies to the production, including testing, import, marketing, use and other handling of products. Any person who produces, imports, markets, processes, uses or in any other way handles products that may cause damage to health shall act with due care and implement reasonable measures to prevent or limit such effects. Any person who produces or imports products has the duty to obtain such knowledge as is necessary to evaluate whether they can cause damage to health.

#### **Planning and Building Act**

The Planning- and Building Act have regulations concerning building cases, expropriation, refunding and building codes. The building regulations include requirements for buildings, requirements concerning the municipal handling of building cases and regulations for the approval of building contractors. The building regulations focus on both achieving good quality in the buildings, and good processes in planning and building them. The Building Act defines the overall framework for the construction activities in regards to health, environment, safety and building design and architecture.

#### **Regulations relating to Systematic Health, Environment and Safety Activities in Enterprises (Internal Control Regulations)(1996)**

The scope of the regulations are, through requirements to systematic implementation of measures, to promote efforts to improve conditions in enterprises in regard to the working environment, safety prevention of damage to health or disturbances to the environment from products or consumer services, and protection of the external environment against pollution and improved treatment of waste, so as to ensure that the objectives of the health, environmental and safety legislation are achieved. The regulations apply to enterprises covered by several acts dealing with health and safety aspects, including fire safety. They cover public and private sector enterprises of all kinds and all types of commercial activity, including consumer services.

### **Portugal**

#### **Portuguese Official Fire Safety Authorities**

The appreciation and verification of the application of the systems and fire safety measures (passive/actives) in buildings involve several entities, specially: SNBPC – national Service for Fire and Civil Protection – coordinates the regulations revision and is responsible for the verification; CSOPT – Superior Council of Public Works and Transports is responsible for legislation, IPQ – Portuguese Institute for Quality is responsible for standardization, certification and methods, LNEC – National Laboratory for Civil Engineering is responsible for the evaluation of the materials behaviors to fire, City Halls and professional Fire Brigades are responsible for appreciation and control, The Ministry of the Economy is among other things responsible for industrial installations.

SNBPC is the new service resulting from the merging of the former National Fire Service and the National Service for Civil Protection. The new service was created by DL 49/2003 published in the DR nr 71 on the 25<sup>th</sup> of March 2003. The Service is in an installation phase, having inherited the competences from the competences from the two previous organisms, specially on the fire safety in building areas, proposals of legislative measures, realization of studies, emission of opinions and definition of analyses criteria and elaboration of inspections plans in fire safety ambit. When this new Service is being settled, having interacted/received every single competence from the former organizations

In the SNBPC there are 14 technicians working permanently in the fire safety area distributed between the central Services and five District Technical Offices, being in an installation phase the remaining 13 districts we hope to have soon a total of 27 technicians. In the professional fire brigades there is, in average 12 technicians in each working officially and permanently in the fire safety area.

The analysis and inspection of applying security measures to prevent building fires in Portugal concerns a variety of entities, namely:

The legislation today includes many detailed rules for different types of objects. In elaboration is a system with general regulation and a common structure whit annex specific and typical according the building type. Rules are prescriptive and owners are deemed to satisfy them. In the future there will be general regulations, it will be smaller and more performance based.

Legislation concerning fire safety in Portugal is dispersed for multiple legal diplomas, according to the type/use, still varying in its form according to the publication time (the first specific diploma of SCI appeared in 1989, after the Chiado fire (centre of Lisbon), having been published the last diplomas in 2002.

With the aim of including all type of buildings and to facilitate the understanding, eliminating repetitions and contradictions, among the several diplomas, which makes its application hard, in particular in buildings of mixed occupation, SNBPS is developing a proposal of RGSCI – General Regulation of Fire Safety in buildings, being foreseen its conclusion within four months (from nov 2003). It is intended to gather the 16 legal diplomas, totally prescriptive, in one single RGSCI with prescriptive and demanding norms (in elaboration) with the final objective of a more exact RGSC in future.

Referring to RGSCI, it should be characterised by the following aspects:

- Universal application (independent of the use, occupation or property nature)
- To comprise the whole cycle of life of the building
- Explain competences and responsibilities of the entities involved in the process
- To contain norms prescriptive where necessary and whenever possible of the demand type, having in attention the deficient culture of safety and the reduced formation of technicians and leaders.
- To respect the “standstill” situation, as member of the European Committee for Normalization (CEN) the new norms should be framed in EN and ISO.

- To respect Euroclasses, A1, A2, B, C, D, E and F, defined in the Community decisions (2000/147/CE and 2000/367/CE relative to the reaction and resistance to fire, referring in simultaneous the actual classifications.

## Sweden

There are three main pieces of legislation for fire safety: the Swedish Rescue Services Act, the Flammables and Explosives Act, and the Planning and Building Act

### **Swedish Rescue Services Act and Flammables and Explosives Act**

The Swedish Rescue Services Agency (SRSA) is a government authority with expertise on fire safety. By the authority of the Swedish Rescue Services Act the SRSA works with the development of standards, which entails drawing up regulations and general advice aimed both at individuals and authorities. The act includes rules for all kinds of rescue services, and the supervision of fire safety. Regulations regarding chimney sweeping are also included. The implementation of a reformed Rescue Services Act was done in January 2004.

### **The Planning and Building Act**

The Board of Housing, Building and Planning deals with planning, the management of land and water resources, urban development, building and housing. The Planning and Building Act is the law used for the implementation of the EU's Construction Product Directive and a number of various standards. The building regulations include fire safety issues.

Local authorities perform most of the supervision and inspections.

## The Netherlands

There are four main pieces of legislation for fire safety: Fire Services Act of 1985, Housing Act, the Labour Act and the Environmental Act.

### **The Ministry of the Interior and Kingdom Relations, Disaster Control and Fire Services Department**

The department of Disaster Control and Fire Services is the government authority with expertise on fire safety. The department draws up regulations and gives general advice, aimed both at regional and local authorities. The department works by the authority of the Fire Services Act.

### **The Ministry of Housing, Spatial Planning and the Environment**

This Ministry has the task of creating the right conditions for the quality of housing and other buildings and for the quality of living in today's and tomorrow's society. There must be sufficient space for people to live healthily, feel safe and have respect for their living environment. The task on the area on housing and environment are based on the authority of the Housing and the Environmental act. Based on the Housing Act, the Building decree (act) is also an important base for regulation (not only on residential, but also on non-residential buildings and works).

### **Inspections of the ministries**

Both the Ministry of the Interior and Kingdom Relations and the Ministry of Housing, Spatial Planning and the Environments have a department of Inspection that is responsible for the periodical inspection on regional and local authorities.

## **Regional and local authorities**

Regional and Local authorities are responsible for fire prevention and fire fighting and perform most of the supervision and inspections. They have additional local legislation concerning the use of buildings regarding fire safety.

## **UK**

The legislation currently applying in the United Kingdom is rather complex. A different legislative process applies in England & Wales, in Scotland and in Northern Ireland. In addition the Channel Islands and the Isle of Man have separate legislative assemblies applying separate legislation.

Note: The answers given in this questionnaire will use England & Wales as the basis for the replies with, where appropriate, separate responses for Scotland & Northern Ireland. There are no answers given for the Channel Islands or the Isle of Man, as no central UK government data is collected regarding these matters.

There are currently well in excess of 100 separate elements of legislation that cover fire safety in buildings in use. In the majority of buildings fire safety is covered by either the Fire Precautions Act or the Fire Precautions (Workplace) Regulations, although specific elements of legislation may also apply according to the use the building is being put to, such as Theatres Act (for a building being used as a theatre) or the Licensing Act (for a building selling alcohol).

In the case of any new building work, or material alterations, the fire safety issues will need to be taken into account as part of the approval process under relevant building legislation.

Note: There are different legislative processes in England & Wales, Scotland and Northern Ireland, however they are in principal the processes are very similar. In the case of very high risk premises, such as petrol refineries, certain chemical plants and nuclear installations, the responsibility for fire safety enforcement is given to the Health & Safety Executive (a central government body).

The UK government proposes major changes to the legislation covering fire safety in buildings in England & Wales, which it is intended will come into effect in the next 1 or 2 years. It is anticipated that there will be similar changes in Scotland and Northern Ireland at the same time.

Whilst the main legislation affecting fire safety is the same in both England and Wales and Scotland, Scotland has devolved responsibility in all matters relating to fire. Consequently any new legislation or amendment of existing laws needs enactment by the Scottish Parliament. The ability also exists for Scotland to introduce new legislation which is not necessarily replicated in England and Wales. The primary duties on fire authorities. Including a duty for fire safety, are inherited through the Fire Services Act 1947, with the subsequent additions identified in the response already made.

However in 2002 the Scottish Executive, which is the appropriate term for government in Scotland, introduced a White Paper outlining proposals to adapt the service in Scotland. A copy is enclosed for your information. You will see within this document that there is a suggested process for new legislation to be enacted in the second term of the Parliament. That term will commence on 1st of May 2003 and run for four years.

The clear intention is to introduce principal legislation, that is a new Act which will replace the 1947 Act, and with it the necessary powers, duties and responsibilities, including those relating to fire safety. This is at variance to a current proposal in England and Wales to use



the method of subsidiary legislation through regulation, as the process of taking forward the next series of changes.

### **National Authorities**

In England & Wales the government department responsible for fire safety in buildings is the **Office of the Deputy Prime Minister**. The same department is also responsible for Building Regulations. In Scotland and in Northern Ireland there are separate, devolved, government departments.

The **Scottish** Executive is the appropriate authority in Scotland for government and manages responsibility through the Fire and Emergency Planning Division which is part of the Justice Department. Within the Fire and Emergency Planning Division a Fire Branch is established, which has responsibility for all policy matters relating to Scotland. In addition a Fire Service Inspectorate is established, separate to the England and Wales Fire Service Inspectorate. At municipal authority level all authorities are Unitary and therefore undertake responsibilities for the discharge of the majority of municipal duties.

There are two Unitary authorities responsible for fire brigades and six where the Unitary Authorities are combined to form Joint Fire Boards.

# 10. Requirements for fire prevention arrangements in buildings

How are the Construction Product Directive, the interpretative document “Safety in case of fire”, and CEN standards included in building legislation? Describe and explain how the building process works. When and how are fire safety issues handled? Are there any specific problems in this area? Are there any requirements on the documentation for fire prevention arrangements in buildings?

**Answers are reported question by question.**

## General findings

Performance based rules are introduced and followed by handbooks and standards. Fire safety is a central part of the building safety and that needs to be understood by many actors. The engineering approach of fire safety is a discipline that should be better known by builders, users, controllers, employees and fire fighters. The importance for the fire brigade (both preventive and response units) to be involved at early stages is noted in many answers. All parts need to co-operate. Changes may be done during the lifetime of a building (change of use, of construction) that may affect fire safety. The interconnections between building codes, fire rules and fire response have to be strong, supervised and up dated to keep the level of fire safety.

In some countries fire safety authorities get more involved and in others they have got a reduce role.

## Answer from the countries

### Austria

#### **Construction Product Directive included?**

There are 9 different building legislations in Austria. The development of a common building legislation is still in progress. Safety in case of fire will probably be included in the Federal Constitution.

Implementation of the CEN standards into legislation is a developing process. There are “translation tables” for the fire qualifications of building products from national standards to CEN standards.

#### **Building process - fire safety**

Differs from state to state and depend on the usage.

Residential premises:

The building authorities of the states are responsible for fire safety issues. They may refer to different experts e.g. fire brigade.

Industrial buildings:

The fire safety assessment fall under the responsibility of building authorities of the states, authorities of the district and the authorities for working places. They may refer to different experts e.g. fire brigade.

### **Documentation for fire prevention**

The owner or user of a building has either a concept for fire safety or the authorities give them written directions.

## **Belgium**

### **Construction Product Directive included?**

Building standards are now always prescriptive. A study have been carried out to modify this basic standards and suggest standards performance based. Different adaptations are carried out of are in progress for example, lift, fire reaction, fire resistance,...

### **Building process - fire safety**

1. Building proprietor asks for a building permit to local authorities (mayor)
2. The mayor asks to fire brigade to give an advice on fire security
3. The fire brigade writes a report in accordance with existing rules (basic standards and specific rules)
4. This report is send to the mayor and afterwards, the report is send to the building proprietor.
5. After the construction, the fire brigade checks the conformity between the report and the building

If there is an impossibility to satisfy the standard then a commission of dispensation exist.

There are some problems with uniformity of reports, different interpretations for different local fire prevention officers. The SPF Interior makes inspections for fire brigade (among after things the reports of prevention)

### **Documentation for fire prevention**

The basic standards and specific rules describe fire resistance, classes of building, compartmenting, escape strategy, lift, ...

## **Denmark**

### **Construction Product Directive included?**

Building standards are prescriptive, but we allow other solutions if it can be documented, that the fire safety is acceptable. It is planned to implement performance based rules in near future (introduce Fire Safety Engineering). The building standard will then be in two parts, one prescriptive and one performance based. It is expected that the performance-based rules will only be used in few percent of the buildings.

The Construction Product Directive and the European standards for classification of building materials are implemented in the building legislation.

### **Building process - fire safety**

Steps in the building process in the Building Act

1. The building proprietor asks for a building permit.
2. The local housing committee invites stakeholders to consultations, and they can also call in the local fire brigade as experts.

3. For some kind of projects (places with high fire load/fire risk) the local fire brigade is responsible for the part of the building permit that is related to fire safety.
4. In an early stage of the project it is normal with a permit regarding the foundation of the building.
5. A building permit is issued on the basis of a detailed project.
6. When the building is complete the local housing committee provides a certificate stating that the authorities have not found any reason to complain. There is no mandatory inspection before the commencement of use of the house.

It is often a problem that the local housing committee doesn't have an education in the field of fire safety. It results in situations where the local fire prevention officers have to use fire inspections to correct faults in building constructions.

### **Documentation for fire prevention**

Yes, but there isn't a demand for a special document. The documentation should set out the fire resistance classes of the building and its components, compartmenting, escape routes, the function of air handling installations in the event of fire.

## **Finland**

### **Construction Product Directive included?**

CPD is implemented by building legislation with a separate act on product approvals. The six essential requirements of the CPD are incorporated into building legislation as such.

### **Building process - fire safety**

Building process:

- Written application for a building permit. Application must include specific reports, master drawings and such.
- Local building authority approves the building permit. Depending on e.g. size of the building municipalities have different practises whether the approving body is a committee, a municipal board, head of a specific office, etc.
- The necessary meetings and inspections are specified in the permit, also is specified what drawings and reports must be submitted to the building authority.
- The different requirements are established in more detail in the start-up meeting, which can be one or several meetings and be arranged even before the permit is approved. It is the builder who arranges this meeting and among attendees are at least the site manager, chief designer and building inspector from the local building authority.
- The builder has the overall responsibility that all relevant regulations are followed. This includes supervision of the work for which purpose an inspection record must be kept of all the checks and inspections.
- Some of the inspections are carried out by the building authority. On application, supervision may also be assigned to the builder in accordance with an approved supervision plan.
- The building authority carries out final inspection. It covers mainly the documentation.

Fire safety issues are taken into account as part of the approval process.

Local rescue authorities are in most municipalities actively involved in approval process working in close collaboration with building authorities. The collaboration may take different forms: joint committees, written consultation, joint inspections, etc. In most municipalities building authorities rely heavily on rescue authorities' expertise when it comes to fire safety

aspects. Rescue authorities involvement is considered extremely important and in new legislation that comes into force in January 2004 this is mentioned as one of the tasks of the local rescue services.

In addition to the approval process, in many buildings rescue authorities carry out a fire inspection before the premises are taken into use. This kind of fire inspection is always carried out in high-risk objects.

### **Documentation for fire prevention**

One specific documentation requirement deals with the instructions for use and maintenance of the building. These instructions need to cover e.g. the information on what kind of maintenance routines are needed for different equipment and systems.

Safety documentation must be drawn up for certain premises, both new and existing. These are residential premises with five or more apartments, workplaces with 30 or more people present in the building, hotels, hospitals, places of assembly, larger industrial premises etc. The documentation must cover information on accident risks, prevention measures, training, emergency plans, etc.

## **Germany**

### **Construction Product Directive included?**

In Germany the CEN-standards are obligate. The “Eurocodes” are content of all state building laws. Exceptions from these standards must be submit at the state building authority. The state authority examines the request and can give a admission.

### **Building process - fire safety**

Steps in the building process in the Planning and Building Act

1. The building proprietor employs a **licensed architect** to **submit the building request** to the municipal construction license authority (building authority in city or county). The request is considered submitted only upon completeness and without mistakes
2. The **construction license authority (building authority)** **examines** the request and **consults several prescribed offices**. According to the type of building or use this might involve the fire brigades or fire prevention authorities of a county. Several of the Federal States have licensed private experts for fire prevention.
  - 2 a) *Several states have a fast track construction permit system. Buildings that meet all state requirements and are intended for use as residential or office buildings (usually buildings below the high rise threshold and max. size of up to 40 by 40 meters) merely need to be registered with the construction license authority. The execution of the building plans and adherence to all fire prevention regulations are the responsibility and liability of the architect and the building proprietor.*
3. Once all offices have been heard, the construction license authority (building authority) issues a building permit that incorporates all comments of these offices. Depending on the building type or use, the building permit may contain special technical, construction or operational fire prevention requirements. If this is not the case, the general fire prevention requirements of the building codes are in effect.
4. The building proprietor receives a document from the construction license authority (building authority), the building permit. The building proprietor may

object within a prescribed time period and may object to all or parts of the building permit. Once the time frame for objections has expired the **building permit** becomes a part of the construction ordinances and thus becomes valid.

5. **The building may be constructed.**

In case of large special buildings several inspections are conducted during the course of construction. Upon completion of the construction, the building proprietor reports this to the construction license authority (building authority). They may final inspect the building, however, this is not a requirement. As a rule, final inspections of special buildings are obligatory. All certificates of expert engineers concerning the technical aspects of the building (sprinkler systems, ventilation systems, emergency lighting, etc) must be presented. The fire brigade or fire safety offices may participate in the building inspections.

In accordance with the building permit the building proprietor or the user of the building is responsible for fire safety for the entire life of the building.

Those types buildings that are subject to fire prevention inspections are noted by the inspectors because of at times substantial deficiencies caused by functional alterations or unauthorized usage of the building. The owner or the occupiers of buildings are not aware of the consequences of fires.

### **Documentation for fire prevention**

Fire protection regulations for buildings in Germany contain vast requirements for people protection, fire resistance classifications of structural parts, escape routes, protection from smoke, licensed building material, fire protection technology to include inspection regulations.

Yet there are always situations for alternative ways to arrive at the fire protection targets. A “documentary for fire prevention arrangements” is applied towards special buildings.

## **Greece**

### **Construction Product Directive included?**

At the moment they are not included. It has been an attempt for the Revision of the Regulations 3 years ago. However, the Authorities seem that they not have any serious concern about that at least for the present time.

### **Building process works - fire safety**

1. The land owner through professional designers apply to the local Building Authorities for a building permit laying down a complete file including all the drawings and calculations of the architectural and structural design of the planned building.
2. This file includes among others the fire design according to the Greek legislation. The control of the passive fire design is made by the City Planning Department and the control of the active measures by the local Fire Brigade.
3. When, perhaps after consultation the above building design is approved, a building permit is issued and the owner could start the construction.
4. After the completion of the building, the responsibility for the fire safety measures is given to the designer and the owner.
5. An inspection from the Building authorities and the Fire Brigade is not mandatory but could take place at any time during the life of the new building. If the building is of major public interest (department store, cinema, restaurant, industry etc.) it is mandatory to get a fire protection certificate after inspection and before any use. The

duration of that fire safety Certificate is usually 5 years. Violation of the fire safety regulations orders is prosecuted and punished.

In some buildings, (e.g. industrial plants, public gathering areas etc) the employee training is required by the legislation in order to obtain the fire protection certificate. The training includes the manipulation of fire protection systems. In addition, an employees training program is implemented in high risk areas, which sometimes includes accident scenarios in order to test the co-operation between the authorities involved and the employees or public.

There are many problems in this area:

- There is generally an underestimation of fire safety necessity by designers, engineers, constructors and building users.
- Though almost all buildings must install fire protection means according to the regulations, usually only the owners who ought to get a business (operation) license by the competent authority install the required fire protection measures.
- There is not an official Fire Testing Laboratory, there are only few Greek fire test standards and the fire performance requirements of buildings materials and components are limited in the legislation
- There is not enough co-operation among the different specialists who are involved in a building planning (architects, civil engineers, electrical engineers, fire experts et.al.). Many times the fire safety plans affect the architectural planning and this creates several problems, if there is not such a co-operation and provisions have not been made.
- In some cases, there are more than one authorities having jurisdiction. Since there is not often enough co-operation among the different authorities and not well-clarified jurisdiction and responsibilities, difficulties and confusion could be found.
- There is a very limited number of experts with experience in fire safety engineering.

## **Ireland**

### **Construction Product Directive included?**

This is covered by the Building Control Act, 1990 and associated regulations. The Building Regulations, 1997 set out, in functional format similar to the “Safety in Case of Fire”, the standards of fire safety to be achieved in design and construction of buildings in Ireland. These regulations are supported by a series of Technical Guidance Documents, including TGD B – Fire Safety, use of which indicates prima-facie compliance with the functional requirements. TGD B makes provision for designers to use methods and designs other than those it contains, including fire safety engineering solutions, to achieve compliance with the Regulations.

TGD B is currently being revised to incorporate European fire performance standards, testing and classifications.

### **Building process - fire safety**

Compliance with the national Building Regulations in Ireland is primarily the responsibility of the designer, builder and owner of the building. At present we do not have either a statutory approval system (as in the UK) or a statutory certification of compliance system (as in southern Europe). For many years, a non statutory certification of compliance system, for property conveyance purposes, has operated by agreement between the legal (Law Society) and architectural profession (RIAI). The desirability and feasibility of introducing a statutory

certification system, which is provided for in the 1992 legislation, is currently being examined, and an Interim Report is expected shortly. Although the 1992 legislation also establishes Building Control authorities (the 37 principal local authorities) and gives them a range of enforcement powers, they do not have the primary role in achieving compliance with Building Regulations, as this is effectively achieved by the parties involved during sale of property.

The exception is the Fire Safety Certificate system already described above. In this case, Building Control Regulations made in 1992 and amended in 1997 require developers to obtain a fire safety certificate, which effectively constitutes a check on the fire safety aspects of the design, before construction commences. The developer must submit an application to the relevant building control authority for a fire safety certificate, with appropriate drawings, specifications and calculations to demonstrate that the design is in compliance with the requirements of the Regulations (and TGD B, or an acceptable alternative). A fee is payable with the application to cover the costs of the building control authority. The relevant fire officers assess the design for compliance and recommend to the building control authority to issue the certificate, with or without conditions, or to refuse it. Some 6,000 FSC applications are processed each year. Single domestic buildings (but not apartment blocks) are excluded from the requirement to obtain a fire safety certificate, but they are not excluded from meeting the requirements of the Building Regulations, including fire safety. The Fire Safety Certificate constitutes a very significant proportion of fire safety work in Ireland currently, and this has been prioritised, as the past decade has seen unprecedented construction development in Ireland. The intention has been to concentrate available resources in this area so that a fundamentally safe building stock is created, and avoiding the difficulties of trying to retrospectively add safety, including structural changes etc in existing buildings.

Developers are also required by law to lodge ‘Commencement Notices’ with the relevant Building Control authorities before actually starting to construct. This is to enable inspectors (Building Control Officers) to visit sites at appropriate stages of construction. There is not a universal requirement for site/ during construction inspections, but a national target inspection rate (12 –15% of buildings covered by valid Commencement Notices) is achieved by many public authorities.

As will be seen from above, fire safety is a central part of building control functions in Ireland. In a number of local authorities, the task of administering the overall building control system has been assigned to the fire service. The Review Report (2002) considered that this was a beneficial practice and should be extended to all local authorities. Consideration is now being given to implementing this recommendation.

### **Documentation for fire prevention**

See above on requirements to obtain fire safety certificates.

In addition, the series of Guidance on Fire Safety publications for persons in control of different categories of premises (copies supplied) contain a recommendation that a Fire Safety Register is maintained in respect of individual premises. The guides contain advice on the issues to be covered in the Register, and fire officers check that this is up-to-date when they carry out inspections. One of the issues being included in the updating of the Fire Services Act, 1981 is giving a specific statutory basis to this ‘good practice’ requirement, as it is generally seen as a good indicator of fire safety management in a premises.



Another documentation related issue under consideration is the need to link the design of fire safety in complex buildings with the type of fire safety management register referred to above. There is a danger that the benefit of inherent safety design features and complex active safety systems may be lost when a building passes from construction into use, or as it is changed over time. The concept of a “Building Safety File” has been raised as good practice.

The proposed amendments to the Fire Services Act, 1981 also will enable the fire authority to require a person in control of a premises to have a fire safety assessment of their premises carried out and reported upon by a competent professional.

## **Italy**

### **Construction Product Directive included?**

Many norms implement European norms, and there have been many reviews of the existing rules. This process was carried out easily, since the precepts given by the Fundamental Requirements of the Directive were already present in the previous regulations. The Directive were implemented by the Presidential decree no. 246/1993. Concerning the regulation process of the CEN, according to the New Approach, Italy expresses its opinion through the UNI – Voluntary Regulation Authority – which includes the National Fire Brigade. The firefighter participates in the committees dealing with fire-fighting matters and in other committees active on safety matters. At the end of the formal vote within the CEN, and after the norms have fully reached the status of standardized norms, they are implemented through a decree. The Italian Fire Brigade is represented into the Standing Committee of the Directive by a Standing Fire Expert. Fire Brigade officers follow and take part in the works of the Fire Regulators Group.

### **Building process - fire safety**

According to the Italian regulations, building works are subject to the issue of a building licence- (permission to build) – under the examination of the Municipal Building Commission (present in all 8000 Italian Municipalities). In these Commissions, the Provincial Fire Commander is represented.

### **Documentation for fire prevention**

Yes, they are provided for by the decree dated 4 May 1998 that specifies both documents required in support of the project examination and those to be produced in order to make the inspection possible. The documentation necessary to obtain the Fire Prevention Certificate includes:

- Fireproof certification for doors and other closing parts:
  - Proper installation statement for doors and other closing parts.
  - Proper installation statement of fire protecting elements, such as intumescent coatings;
- Technical report on fire resistance of structural and non-structural elements:
  - Proper installation statement for elements classified according to their fire reaction performances;
  - Conformity statement for plants ruled by law 46/1990 (production, transportation and use of electric power and other plants). Such statement consists in the plant design, in the list of materials used and in the proper installation statement.
  - Proper installation statement for plants not ruled by law 46/1990;

-Statement for the installation of protection plants against atmospheric discharges.

## Norway

### **Construction Product Directive included**

The Technical Regulations pertaining to fire safety are divided in the same main categories as the interpretative document “Safety in case of fire”.

The Construction Product Directive is included as a separate chapter.

The Technical Regulations give references to Norwegian standards, which implement harmonised CEN-standards.

One of the major changes that had to be done was in the field of fire safety. The code related to fire safety was reduced from 32 pages of pre-accepted solutions for «all kinds of buildings» to six pages of performance-based requirements. The new concept of this is attributed to work done by NKB (Nordic Committee for Building regulations), which for many years worked to arrive at a common basis for fire regulations. The close cooperation stems from the Nordic countries having similar climatic conditions, similar resources of building materials, the countries being roughly of the same size with the same standard of living, and limited funds to finance the research and development of the new requirements. Much of this work was harmonised with the Council Directive 89/106/EEC, and its final editing was left very little short of that in the Directives Appendix on “Safety in case of fire”. The formal affirmation was given by the Minister early in 1997 for adaptation July 1, the same year.

### **Building process - fire safety**

In Norway the fields of liability is strictly defined. The system places liability on the owner and the appointed architect, design engineer and contractor. Approved firms who supervise, contractors who build, and firms who control design and execution have to be registered by the local authority to enable them to undertake projects. Local authorities have a considerably reduced role to play in the surveillance of building work.

All parties having contracts with the client for work essential to comply with the building regulations shall be directly accountable to the local authority. Control plans shall define who is responsible to the local authority and how control is performed. The assessment is based on the organisation and quality systems within the firms and the qualification experience within the firms. All work relates to the class of work in terms of complexity and consequences of failure to be undertaken.

#### Steps in the building process in the Planning and Building Act

1. The building owner appoints a competent applicant who applies for a building.
2. The local authority assesses the application to see if the involved firms are approved.
3. The approved architect, design engineer and contractor must submit specified plans, which confirms that all requirements are included and taken into account. The plans must be well documented.
4. When the building is completed the local authority certifies practical completion based on control declarations in accordance with the Planning and Building Act.

The certificate states that the control plans have been followed and the authorities have not found any reason to intervene or complain. There is no mandatory inspection before the building is opened for use.

The local fire prevention officers have at the present no longer a role to play in the enhancement of planning and constructions of buildings. Before a building permit is issued the local fire prevention officers can be invited to the preplanning consultations, but the parties are not forced to do so.

At the moment there are a debate going on if the described process is the right thing to do. The fire prevention officers are not confident with the present situation. There are talks on a governmental basis on how to deal with this problem.

### **Documentation for fire prevention**

The owner of a building with special fire hazards according to a list made by the local fire authority shall provide for that the fire safety is satisfactory documented. The documentation shall describe technical and organisational actions, also maintenance routines and routines for internal control.

## **Portugal**

Major changes are being made now. Not relevant to answer.

## **Sweden**

### **Construction Product Directive included?**

Building standards, which used to be prescriptive, are now performance based. This provides building proprietors with more options for designing the technical fire prevention aspects of buildings, through the use of calculation models and new know-how.

### **Building process - fire safety**

Steps in the building process in the Planning and Building Act

- The building proprietor asks for a building permit and makes a building notification.
- The local housing committee invites stakeholders to consultations, and they can also call in the local fire brigade as experts.
- At these consultations stakeholders agree to implement their own regular checks, which should be carried out on behalf of the building proprietor either internally or by a third party.
- A building permit is issued but only covers choice of site and design. All other requirements, including fire safety must be met in accordance with the relevant building legislation.
- When the building is complete the local housing committee provides a certificate stating that the internal check plan has been followed and the authorities have not found any reason to intervene or complain. There is no mandatory inspection before the commencement of use of the house.

In this system the building proprietor is given all the responsibility for fire safety. But there are severe faults in the inspection system that affects fire safety. The Board of Housing, Building and planning are working towards improvements to the building inspection system. The SRSA feels that there is a lack of knowledge as regards fire safety regulations and how to apply them. This applies to all parties, from architects to tradesmen.

Local fire prevention officers are not happy with the situation since they often have to use fire inspections to correct faults building construction. These faults are often discovered at real fires.

### *Documentation for fire prevention*

Yes, fire protection documentation must be drawn up. The documentation should set out the fire resistance classes of the building and its components, compartmenting, escape strategy, the function of air handling installations in the event of fire, and where relevant a description of fire engineering installations, and internal check and maintenance schedules.

## **The Netherlands**

### **Construction Product Directive included**

The Building act contains referrals to CEN standards.

### **Building process - fire safety**

Steps in the building process in Housing Act:

1. The building proprietor asks for a building permit.
2. Mayor and Aldermen make up a building notification which is published in local newspaper.
3. The permit application is checked on the development plan, the building act, local building regulation, regulation on monumental buildings and a town planning/architectural commission (mainly for checking the esthetical quality of the design) may be called in for advice.
4. Stakeholders have up to six weeks time to object to the permit.
5. When the permit application is according to regulation and no objections are made the building permit is given.
6. During construction inspection can be carried out by the local building and housing inspection. When a building, an alteration or addition to an existing building is under construction without or not in accordance to the building permit, the building activities can be stopped. The local authorities decide when and under which conditions building activities can be resumed.

Fire safety issues are handled in step 3.

The value/effectiveness of fire safety measurements can be affected by the use of the building. For building in which the every day use involves a relatively high safety risk, an additional use-permit can be mandatory. In order to gain a use-permit, a proprietor may be obliged to take additional (not directly building related) measures to maintain the fire safety level suitable for the intended use. The inspection steps during the building process are each carried out by inspection bodies responsible for aspects of the process. The coordination between steps (and inspection bodies) needs improvement. To that end changes recently were made in the Housing Act, The Building Act, The Spatial Act and The Environmental Act.

### **Documentation for fire prevention**

Yes, fire protection documentation must be drawn up. The documentation should set out routes and line up sites for fire engines, the position of the building in relation to other buildings, the height and volume of a building, building constructions, the fire and smoke

resistance of the building and its components, compartmenting, escape strategy, location of relevant elevators, doorways (including turning way), the function of air handling installations in the event of fire and the location of relevant emergency lights and fire engineering installations.

## UK

### **Construction Product Directive included**

In the UK, the CPD was implemented by the Construction Products Regulations, which came into force on 27 December 1991. These Regulations were subsequently amended on 1 January 1995, to take account of the CE Marking Directive 93/68/EEC, by the Construction Products (Amendment) Regulations 1994.

These regulations require construction products to have such characteristics that the works in which they are to be incorporated, satisfy the six essential requirements enshrined within the CPD when, where and to the extent that such works are subject to regulations containing such requirements.

Construction products, which bear the CE marking, are presumed to satisfy the relevant essential requirements unless there are reasonable grounds for suspecting that the product does not satisfy those requirements. Failure to bear a CE Marking is not in itself an offence. The reference above to "regulations" includes any rule, regulation or other provision that has the force of law but primarily relates to our Building Regulations. Building Regulations in Northern Ireland and Scotland differ from those applicable in England and Wales.

In relation to the Building Regulations in England and Wales, Amendments 2002 to Approved Document B (Fire safety) were published on 19 December 2002 and came into effect on 1 March 2003 (see <http://www.safety.odpm.gov.uk/bregs/approvedb/index.htm>).

These amendments recognise the new CEN test and classification standards for reaction to fire and resistance to fire and indicate how they can be used to show compliance with our Building Regulations.

With regard to the Scottish position, the 6th Amendment to the Technical Standards, came into force on 4 March 2002 and acknowledges the new CEN test and classification standards for reaction to fire and resistance to fire and so since this date they have been able to be used in Scotland (see [http://www.scotland.gov.uk/build\\_regs/standards/contents.asp](http://www.scotland.gov.uk/build_regs/standards/contents.asp)).

Similar to England and Wales, the Building Regulations within Northern Ireland are written in broad functional terms and are supported by guidance documents that indicate some of the more common ways in which the Regulations can be met. Therefore, the new CEN test and classification standards for reaction to fire and resistance to fire can already be used now as a way of showing compliance with their Regulations. However, they are currently considering what changes to their supporting deem-to-satisfy document may be needed.

Generally Scotland follows the process identified for England and Wales with the exception that the reference to controls in buildings is the Buildings Standards (Scotland) Regulations 1990 as amended. The sixth amendment in fact does take account of the changes necessary through CEN, although the development draft reference should be 240 rather than 250. Scotland does not use the process of approved inspectors, although new legislation now enacted does allow this process to be introduced should Scotland so desire. In a similar way the changes have yet to occur to enable Fire Safety Engineering to be fully introduced on a

functional basis since technically our standards still require a more prescriptive approach. The movement in the direction outlined, is, however, fully accepted and will be introduced.

### **Building process - fire safety**

The regulatory processes in Northern Ireland and Scotland differ from that in England and Wales. However the general principles are similar.

Builders and developers are required to obtain building control approval of most building work - an independent check that the Building Regulations have been complied with. There are two types of building control body - the Local Authority and, in England & Wales only, Approved Inspectors.

Both Building Control Bodies (BCB) will charge for their services. Both may offer advice before work is started. The BCB reviews the design in respect of the relevant requirements of the regulations, including fire safety. The construction process is monitored by the BCB through periodic inspections until the building is ready for occupation.

Once the Building is occupied the BCB has no further part to play, until such time as the building is altered. At this point a number of regulatory regimes may apply to the maintenance of fire safety in the building these are mainly enforced by the Fire Authority. In respect of workplaces the Fire Precautions (Workplace) Regulations 1997 as amended by the Fire Precautions (Workplace) (Amendment) Regulations 1999 apply a risk based regime as required by the Framework Directive (89/391/EEC) and the Workplace Directive (89/654/EEC).

Therefore, Building Control Bodies are obliged to consult during the building control process with fire authorities about the fire safety aspects of most building work, to ensure that any additional requirements the fire authority may have are known to the developer at the earliest possible stage.

Because both the Building Regulations and the Fire Precautions (workplace) regulations do not prescribe specific standards there can sometimes be problems where Fire Authorities and Building Control Bodies may disagree on what is necessary to secure safety from fire in a particular building.

### **Documentation for fire prevention**

Currently certain of those buildings subject to the Fire Precautions Act 1971 are required to have a "Fire Certificate". This certificate is in fact a comprehensive document incorporating a plan of the building and the physical fire precautions provided and detailing numerous matters relating to the provision and maintenance of fire precautions in the building. However it is proposed to remove the requirement for a "fire certificate" from the new legislation currently being developed.

# 11. Fire safety engineering (FSE) for fire prevention arrangements in buildings

**Please describe the use of Fire Safety Engineering (FSE) including performance based codes and involvement from fire brigades. What are your experiences from fire fighting in buildings that have been designed using FSE? What long-term consequences do you predict as a result of the use of FSE?**

**Describe experience from inspections in buildings where a “fire safety design” method was used.**

## General findings

There are rather few experiences in the use FSE and from fires in buildings where performance based codes were used. Since those buildings often are large and complex they are usually well managed. It is from several answers noted the importance of fire officers trained in assessing FSE-proposals. There is a risk with FSE in the future when it may be used in ordinary buildings that are not so well managed. In such buildings there are more reliance an active systems than passive design. The accuracy of fire prevention documentation needs to be updated. The contingency plans and plans for fire fighting operations also have to be updated now and then.

There is little experience from fire inspections. Concerns are reported from alterations that are not reported and not understood by the occupier or the fire inspector. There are also problems to pass such FSE-information and documentation to all parties that need them. And when it is passed it shall be understood.

## Answer from the countries

### Austria

FSE tools are used rarely. In Vienna FSE designs are normally proved by the authorities or the fire brigade. There is little experience with fires in buildings that have been designed using FSE. Till now no problems arised.

As such types of buildings have a lot of fire safety installations (fire detection systems, smoke and heat exhaust ventilation systems, sprinklers etc.) the buildings are normally in a good condition concerning fire safety.

Notes from the visit – local building inspectors handle the local regulation. The state certify some consultants and expert on the universities to make FSE.

### Belgium

There is very little experience from inspections in such building.

## Denmark

There is not much experience with fire safety engineering in Denmark since we do not have performance based building standards yet.

Performance based design is more complex than prescriptive design and with more prerequisites on the use of the building. The accuracy of the fire prevention documentation and the building owner's knowledge about this documentation is of great importance for the safety level. This problem will be much bigger after several years with rebuildings, change of owners and change of use.

There is very little experience from inspections in such buildings.

## Finland

Building regulations are yet not fully performance based as there are also prescriptive requirements alongside the functional requirements. Performance based approach is given as an option.

FSE is a fairly new concept and not yet widely used which means we do not have that much real experience. At the moment one big concern is how to provide the necessary education and training.

There has certainly been a lot of concern that fire protection will clash with cost savings and the result will be lower level of overall fire safety. Fire brigades are still quite sceptical with the whole concept. In many building projects rescue authorities and constructors have come into conflict, which have resulted even in some court cases.

There is not much experience yet. One aspect that has come up is that there have often been quite extensive alterations after the buildings have been taken into use. These can result in unexpected changes in e.g. how automatic fire safety systems work. If the alterations have not been taken into account in the initial plans it is difficult to inspect whether the level of fire safety is satisfactory.

## Germany

As a rule there are conservative fire protection concepts for construction and internal fire protection in place in Germany. In case of special buildings the fire brigades often participate or are involved. Fire protection concepts using "fire safety engineering", as a rule are established by private fire protection engineers. The methods and models of FSE are different. Fire brigades are aware of these methods but usually do not apply them.

"The Association for the Advancement of Fire Protection" (vfdb), a lobbying group of the fire fighting industry, science and the fire brigades is currently developing a concept for uniform "fire protection engineering methods". This is an indicator that these methods continue to develop in Germany and will find increased applications. It will become necessary to reevaluate and adapt fire brigade operational plans and perhaps even element of tactics.

Experience has shown that in cases where the building operator projects safety concern and employs a competent safety and facility manager for the building, problems hardly occur. The safety and facility manager maintains close relations with the fire brigade and as a rule is well informed about the "fire safety design" and the protection targets.



In those cases that do not show this concern the usual problems found in other buildings subject to inspections are present.

No special problems found in such buildings – perhaps since there is a lack of statistics (noted from the visit)

## Greece

Almost all the terms of the legislation are usually implemented. In some cases, owners of buildings, modify building installations, change use or expand their buildings which has a result in the decrease of fire safety.

## Ireland

Provision was made and encouragement was given to designers to avail of the potential flexibility that FSE offers in meeting the requirements of Building Regulations. Anecdotally, it appears that the vast majority of building design complies with the provisions of the Technical Guidance Document B – Fire Safety. However, FSE appears to be used on a number of significant projects where alternatives to the provisions set out in TGD B must be considered eg large and complex buildings, works in buildings of outstanding architectural and historic importance etc. The fire safety engineer has emerged as a member of many design teams, and there are a number of firms specialising in this area in Ireland. Fire officers have been trained in assessing FSE-based proposals.

As national regulators, one issue we note is that design professions on the one hand ask for flexibility to enable them to design whatever form or structure they desire, and on the other they ask for prescriptive regulations and guidance which allows them to show that they are discharging “duty of care”. This is a pendulum which swings over and back with time.

As noted above, although we recognize the potential benefits, we have not a developed fire investigation and reporting system.

The long-term consequence of FSE is that an economic solution is available to fire safety design issues, which cannot be addressed by simple prescriptive means. Some concerns have been expressed about the dangers of situations developing when a building is used outside the design parameters used in the FSE solution. It is in this context where there may be more reliance on active safety systems than passive design and construction features that the potential of the “Building Safety File” referred to above has been raised.

## Italy

FSE is directly usable by designers for activities not ruled, such as industrial plants, according to the characteristics of these activities. In some cases, as for example in safety reports concerning activities at risk of major accident, guidelines have been developed supporting designer activities. These guidelines are based on FSE methods.

Moreover, FSE is directly usable in some safety aspects of theaters and such, where, due to the large size of scenes, outcomes of fire resistance tests carried out by means of ovens are not considered realistic. As codified methods, not strictly deterministic and containing FSE elements, the following codes are accepted as means of fire resistance assessment for the release of Fire Prevention Certificate:

- norm UNI 9503 and ENV 1993-1-2-Eurocode 3, for steel structures
- norm UNI 9502 and ENV 1992-1-2-Eurocode 2, for concrete and prestressed concrete works.

- norm UNI 9504 and ENV 1995-1-2-Eurocode 5, for wooden structures.
- Decree 6/3/1986, concerning wooden structures
- Bulletin no. 192 dated 28/12/1999, issued by C.N.R., National Research Committee concerning design of fire-proof steel structures.

Concerning firefighting in buildings designed in compliance with F.S.E., statistics on rescue interventions have showed positive results in terms of fire reduction, feasibility of rescue interventions and fire propagation. The expectation is to achieve better results, or at least the same, in comparison with those achievable with the implementation of deterministic rules, with the advantage of the possibility to resort to alternative methods (“equivalent safety”), more appropriate to satisfy the activity functional requirements and the contractor’s economic and financial needs.

## Norway

The responsibilities rest on the parties involved in the building process. The local fire prevention officers and the local building authorities have no longer the obligation, or rather the possibility, to inspect and hand out remarks due to miscalculation or incorrectness in the design process.

There is the same problem in Norway as in Sweden concerning accuracy of fire prevention documentation after several years of rebuilding, change of owners and change of use. Especially change of use has led to serious consequences in warehouse stores. History has shown that incorrect or miscalculated use of sprinkler systems has led to severe fire damage.

We also face the same kind of problems as in Sweden when it comes to inaccurate contingency planning and plans for the fire fighting operations. This has to be changed. Fire fighting operations must be planned and coordinated with the use of fire prevention measures.

There is, as in Sweden, at the present very little experience from such buildings

## Sweden

Fire prevention can be designed by calculations. There is not so much experience in Sweden from real fires in very complex constructions. Experts on fire safety engineering are found at the fire brigades. Normally they are trained at the Department of Fire Safety Engineering at Lund University. The SRSA feels that this is important since fire prevention officers have a role as experts in the building process. A growing problem is the accuracy of fire prevention documentation after several years of rebuilding, change of owners and change of use.

Another problem is to maintain updated documentation that can be used by owner and fire officers when there is a fire – large or small. Since an FSE building is complex, there has to be an equally complex contingency plan for firefighting operations within it.

There is very little experience from fire inspections in such buildings.

## *The Netherlands*

In the Netherlands FSE is very rarely used. The relevant inspection bodies (fire brigades) are at the moment not capable of judging and/or appreciate FSE.

At this moment Ministry of Internal Affairs is conducting a study for a “fire safety design” method. Some local authorities expect very good results of such a method. Experience therefore is at this moment not available

## UK

There are a large number of buildings that have been built, based on fire safety engineering principals, over the last 10 to 15 years. The UK Building Regulations are now “functional”, and performance based. This allows designers to propose solutions that are not code based, but that meet the objective of providing a fire safe environment for the occupiers. The approval is given by the Building Control Body, but throughout the approval process the fire brigade must be consulted and, where possible, their agreement obtained.

Until recently there were no standards or design codes to advise on their design or construction. British Standard Draft for Development 250 was introduced approximately six years ago, and started to provide the basis of a framework for fire safety engineering against which designers and approval bodies could work. This has now been replaced by a full British Standard, BS 7974.

There is limited information on fires in fire engineered buildings. It is felt that this is because the majority of such buildings are the larger and more complex buildings, which are usually very well managed. However there is concern that, as the development of fire engineered buildings becomes more common and that such buildings become more “normal”, the opportunity for fires in these buildings will increase.

Following the terrorist attack against the World Trade Centre there is also concern that the design of buildings no longer reflects current fire fighting practices and that, conversely, fire fighting practices do not reflect current building design. Therefore the UK Government has created the Building Disaster Assessment Group, with the following terms of reference: To consider the potential implications, for the UK fire service, of terrorist activities within the built environment, taking into account fire authorities responsibilities for ensuring the provision of appropriate fire precautions for buildings in use and safe operating procedures that reflect building design.

There are a number of research projects initiated by this group that are already clearly demonstrating that there is a wide gap between the assumptions that are contained in current building design guidance and the ability of the fire service to intervene effectively.

There is growing evidence that in certain cases critical elements of a fire engineered solution are being ignored or not being maintained. In some of these cases it is felt that insufficient information is being passed over to building occupiers or that the occupiers do not understand the importance of maintaining the systems provided.

Scotland follows England.

## 12. Retroactive fire safety demands on buildings

**Does the legislation permit retroactive fire safety demands on buildings? If yes, under what circumstances?**

### General findings

Normally the safety level is raised at rebuilding and change of use. When a license or building permit is required the fire safety can be controlled. New fire safety precautions can be ordered if life is at danger. That is mainly done by a “fire law approach” that applies to old and new buildings. Fire inspections are used to try to improve fire safety. There are many interconnections between the building and fire regulations. That includes the interactions between fire preventive measures and the tactic to fight the fire. Risk assessment by the owner has to be updated rather often.

### Answers from the countries

#### Austria

The trade of law permits retroactive fire safety demands if the life and safety of humans is concerned or if there is a danger for the environment. Economical aspects have to be taken into account.

#### Belgium

Rebuilding or change of use often requires a new building permit and then safety levels can be modified. The basic standards are designed for new construction , not for renovations

#### Denmark

There is no such aspect to the legislation. Fire inspections are used to try to improve fire safety with recommendations. Rebuilding or change of use often requires a new building permit and then safety levels can be raised.

#### Finland

Retroactive requirements can and have been issued but not as a part of regular building regulations. European directives on workplace safety and their fire safety provisions have been incorporated into occupational safety legislation. Rescue services legislation has also several fire safety requirements, which apply both to new and old buildings. Mostly these requirements deal with fire safety management or with fire safety equipment, such as smoke alarms.

#### Germany

As a rule, “grandfathers protection applies” (no retroactive demands) to all regularly constructed and used buildings during their entire life span. Exceptions are in place in cases of current developments that show specific dangers to persons. In these cases the “grandfathering clause” is secondary.

In cases of usage changes or rebuilding to an licensed building that require additional licensing, fire protection requirements may have to be adjusted.

## **Greece**

The legislation permits retroactive fire safety demands in some cases and under the condition that the building owner will install the required fire protection measures before a well defined date. Rebuilding or change of use, often requires a new building permit and then safety levels can be raised.

## **Ireland**

Yes, as explained above the Fire Services Act, 1981 places responsibility on persons in control of premises to take reasonable precautions to guard against the outbreak of fire and to ensure the safety of persons on the premises in the event of a fire. The “reasonable precautions” are set out in the series of “Guidance on Fire Safety” documents published by the Dept of Environment and Local Government. When a document is published, a person in control must assess their premises for compliance with the guidance given. Where there is a gap, they must decide how they are going to achieve the required level of safety, and this can and does involve retroactive fitting of both passive and active fire safety measures. The balance in achieving an appropriate level of safety between passive, active and fire safety management is recognised in the guides. In our experience there is resistance in the business community to what is regarded as “non-productive investment” in fire safety. However, where it can be linked to a marketing advantage, we find ‘persons in control’ are more willing to undertake work. For instance, retrofitting of automatic fire detection and alarm systems, along with other fire precautions, would be common in sleeping accommodation, such as hotels, guesthouses etc.

## **Italy**

All technical rules issued starting from the 80’s – second half – include, besides the provisions for the new works, a specific section concerning buildings already existing, indicating the minimum provisions applicable to them, as well as times foreseen for the carrying out of the adaptation works, usually ranging from 1 to 7 years, according to safety priorities and the complexity of works.

## **Norway**

The Norwegian legislation does not include permit to retroactive demands on buildings. Still the regulations give the authorities authority to secure necessary safety standards within reasonable economic limits in existing buildings.

Fire inspections carried out in objects are meant to improve fire safety. Rebuilding or change of use often requires a new building permit (depending at a certain grade on the extent of the process). A curiosity though is that if a accredited fire prevention enterprise using calculation models states that a owner of a building can allow more people to enter a building without doing any rebuilding measurements, no new building permit is required. This is a growing “headache” for the local fire prevention authorities and their officers.

## **Sweden**

There is no such aspect in the building legislation. Fire inspections are used to improve fire safety. Rebuilding or change of use often requires a new building permit and then safety levels can be raised.

The Swedish Rescue Services Act states in a performance based paragraph:

“Owners or occupiers of buildings or other constructions shall to a reasonable extent maintain equipment for fire extinguishing and for life saving in the event of a fire or other emergency; and take those measures required for the prevention of fire and for the limitation of the consequences of fire.”

## The Netherlands

Till 2006 smoke detectors based on ionisation technology may be sold and used. In case smoke detectors are proscribed only the optical version may be applied.

## UK

The fire brigade can, where appropriate, require the provision of additional measures if alterations have been carried out to a building without the approval of the building control body or the fire brigade. In addition the occupier must ensure that the fire precautions provided in a building are based on a risk assessment, which must be continually updated. Therefore the fire brigade can require the retrospective provision of fire precautions, irrespective of whether the building has received building regulation approval or not, provided such requirements are reasonable in the circumstances.

# 13. Fire safety of equipment and furniture

<b>How do you deal with fire safety when it comes to equipment and furnishings?</b>
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## General findings

National fire agencies have wishes of fire safety levels but the rules are written by other agencies or in international standards. Fire inspections can decide on fire standards on equipment and furniture in certain buildings.

## Answers from the countries

### Austria

These concerns are dealt with during legal proceedings. The authorities make inspections before the usage of a building is permitted. Notes from the visit; Rules for tested and approved furnishing only in public buildings.

### Belgium

The SPF tries to have an influence on the quality of some equipment : for example : fitter of door

### Denmark

There are no demands except furniture, decorations and exhibitions in places with many people, such as meeting halls, discotheques, show rooms etc. (from visit – better cooperation is needed between authorities dealing with fire prevention, environmental questions and workplace safety.

### Finland

This area is mainly covered by product safety legislation. There is special legislation on fire safety requirements for mattresses and upholstered chairs and furniture.

### Germany

There are standards (norms) for the technical fire prevention equipment of buildings. The states have passed technical building inspection legislation that requires regular inspections of the building technology through experts. The owners must fulfill this obligation. The inspection reports are checked during fire prevention inspections. (Note from visit; in official building there are rules for tested furniture – due to environmental considerations brominated flame retardants are not allowed in consumer goods. Like to get some classification on home furniture.)

### Greece

Requirements for equipment and furnishings are not described in Fire Regulations. In many times this is handled by the owners, the fire insurance, and the authorities

## Ireland

Standards are developed and published for supply and installation of fire safety equipment by the National Standard Authority of Ireland. These standards increasingly reflect the European harmonisation process.

Fire safety of domestic furnishings is regulated by the Department of Enterprise, Trade and Employment, which deals with consumer issues.

## Italy

In buildings where equipment and furnishings, because of their characteristics, can represent a risk for the community, specific rules are provided for fire reaction requirements.

For the equipments, in general terms, the components of plants are ruled by procedures and technical prescriptions for the plants, for the safety disposals and for other element relevant for fire safety. Eg.: the decree D.M. 31<sup>st</sup> July 1934 rules the use and the stock of mineral oils, prescribes the approval by the Ministry of the Interiors for the firefighting disposals to be used in the stock areas. The law 186/1968 – regarding the safety of the electrical plants – gives indication to follow the norms of the national bureau for electrical standards, C.E.I. The law 1083/1971 – dealing the safe use of combustible gas – address to the UNI-CIG norms (UNI-CIG is the branch of the National Standard Bureau competent for gas). The law 46/1990 states the procedures for plants and installation of plants.

## Norway

This is generally dealt with during inspections made by the fire services.

We do also have a regulation called *Regulations relating to the ignitability of mattresses and upholstered furniture*. The purpose of these regulations is to prevent injuries to health caused by mattresses and upholstered furniture being ignited by a smouldering cigarette. These regulations apply both to production and import for sale and to any other marketing of mattresses and upholstered furniture for commercial purposes. Any person who produces, imports for sale or in any other way markets mattresses or upholstered furniture for commercial purposes shall ensure that the prescribed level of safety set out in these regulations is complied with. Mattresses and upholstered furniture shall resist ignition by smouldering cigarette in accordance with specific criteria set out in recognised standards.

## Sweden

The SRSA tries to have an influence on the agencies dealing with product standards. At a fire inspection observations and remarks can be made.

## The Netherlands

Some fire safety demands for equipment and furnishings are taken into account in the Food and Commodities Act. Furthermore the Inspectorate for Health Protection and Veterinary Public Health conducts research into fire safety for equipment and furnishing and is responsible for the eventual adaptation of regulations. The government tries to create more awareness and more responsible behaviour with respect to fire safety in relation to choice, acquiring, use and maintenance of equipment and furnishings.

A use-permit is a local instrument, handling issues like:

- buildings (non residential) containing over 50 people

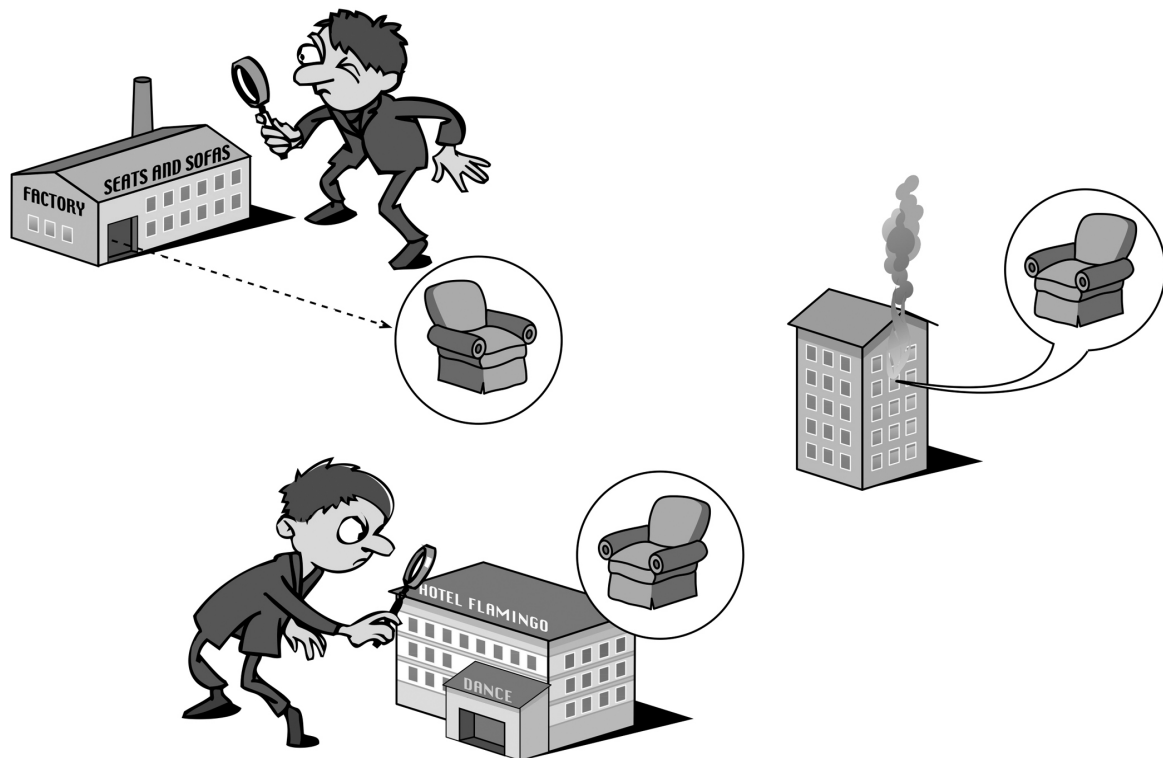


- buildings for storage of substances that are flammable or dangerous in case of fire
- buildings where more than 10 people spend the night that are not residential (hotels, hospitals)
- buildings for day-care for more than 10 children under 12 years of age or more than 10 people with physical or mental disabilities

Whenever a use-permit is required, its main role is to ensure additional measurements are taken for prevention, containment and repression of fire and accidents in case of fire. Mainly to create compensation for the use related risks. The use-permit handles issues like furnishings, exits, installations, engines, waste, fire extinguishers.

## UK

The performance of some materials, in things like furniture in the home, is controlled by regulations. In addition the fire brigade and occupier should take the equipment and furnishings provided into account when making an assessment of the fire risk.



*Fire safety has a broad focus that includes buildings, type of activity, the interior, the owner, the residents, their behaviour, fire inspections and fire fighting. Is the focus on the best targets?  
( Illustration from Swedish Rescue Services Agency)*

# 14. Heritage buildings

<b>Are there any special demands on fire safety in heritage buildings?</b>
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## General findings

These premises are normally inspected. One reason is to provide safety for visiting persons. Here we found few countries with rules to protect the heritage (building and content) itself.

## Answers from the countries

### Austria

Not by legislation

### Belgium

No

### Denmark

No, except fire inspections every 5<sup>th</sup> year

### Finland

There are no special fire safety requirements in the legislation

### Germany

No! The valid building permit - depending on usage and duration - is applicable for fire protection

### Greece

There are not any special demands on fire safety in heritage buildings.

### Ireland

As a principle, heritage buildings are required to provide a level of fire safety for persons using them similar to other buildings in the same use. However, the means of achieving this level of safety will usually be different from a modern building, and there will be constraints because of conservation objectives. Fire Safety Engineering has proved very useful as a tool for demonstrating equivalent levels of safety, for instance by taking account of the geometry of heritage buildings, it may be possible to show that the time available for escape with particular fire scenarios is comparable with modern buildings.

A booklet setting out an approach to fire safety for persons in control of Heritage buildings in Ireland is attached. A number of publications giving advice in this area have been developed in recent years with conservation bodies.

### Italy

Two specific technical rules regulate heritage buildings:

- Ministerial Decree 20/5/1992 “regulation concerning fire safety rules for heritage buildings intended as museums, galleries and exhibitions”.

- Presidential Decree 30/6/1995 “regulation concerning fire safety rules for heritage buildings intended as libraries and archives”.

## **Norway**

There are guidelines for fire prevention measurements in heritage buildings. It is to the owner’s responsibility to take care for the buildings. The local fire authorities, or rather the local municipalities, are obliged to identify and record it. This identification system is the foundation for the local fire prevention officers and their inspections. As we have a large number of heritage buildings in Norway there is a comprehensive cooperation between the Inspectorate of Ancient Monuments and Historic Buildings, the National Office of Building Technology and Administration and the Directorate for Fire and Electrical Safety.

## **Sweden**

Only expressed in general terms where fire is one of several considerations

## **The Netherlands**

No special demands are taken into account. Demands of fire safety can differ with the Building Act to ensure that these demands not affect the specific character of the heritage building. The building permit of the heritage building contains the exceptions/deviations. If the use of a heritage building conflicts with fire regulation, the use of the building has to be adapted. It can only lead to alterations of the building with permission of the national or local guardians of heritage buildings

## **UK**

No

# 15. Fire inspections and requirements in residential premises

## General findings

The differences are big on inspections routines in homes and on smoke detector rules and coverage. There are building rules for high or special risk residential buildings mainly to provide safe exit in case of fires. Chimney sweeping are stipulated and are the most common prevention activity.

## Answers from the countries

### Austria

Are fire inspections carried out for private residential premises?	Differs from state to state
Is there a requirement for smoke detectors in residential premises?	No. Recommendation in the technical guideline TRVB 115.
Smoke detectors, percent	Unknown but a very small percentage
Are there any other fire prevention activities that are mandatory for residential premises?	Differs from state to state
Are there any other fire prevention requirements for private homes?	Differs from state to state

### Belgium

Are fire inspections carried out for private residential premises?	No
Is there a requirement for smoke detectors in residential premises?	No
Smoke detectors, percent	Unknown at present time
Are there any other fire prevention activities that are mandatory for residential premises?	Chimney sweeping, checking electric installations
Are there any other fire prevention requirements for private homes?	No

### Denmark

Are fire inspections carried out for private residential premises?	No, in general fire inspections on private dwellings are not mandatory. There are special rules for heritage buildings.
Is there a requirement for smoke detectors in residential premises?	No.
Smoke detectors, percent	According to the union of insurance companies, 75% of all homes have bought at least one smoke detector. No statistics are available on the function and use of them.
Are there any other fire prevention activities that are mandatory for residential premises?	Yes, chimney sweeping.
Are there any other fire prevention requirements for private homes?	No.

## Finland

Are fire inspections carried out for private residential premises?	Yes.
Is there a requirement for smoke detectors in residential premises?	Yes since 1999 for all residential dwellings.
Smoke detectors, percent	In 2002: 98 % of which 7 % did not work. Percentages are based on fire inspections carried out in 2457 homes in different parts of country; 99 % based on gallup poll with 1001 answers; In City of Helsinki 90 % of which 19 % did not work. Percentages are based on fire inspections carried out.
Are there any other fire prevention activities that are mandatory for residential premises?	Residential premises with five or more apartments must have fire safety documentation including information also on accident prevention, training, emergency plans, etc. Chimney sweeping with regulated intervals.
Are there any other fire prevention requirements for private homes?	

## Germany

Are fire inspections carried out for private residential premises?	No
Is there a requirement for smoke detectors in residential premises?	No, most state construction ministries reject a requirement to install smoke detectors in private residential construction according to DIN-standard, an inspection is not proposed
Smoke detectors, percent	Not conducted, no reports
Are there any other fire prevention activities that are mandatory for residential premises?	There is a general demand for two escape routes from all inhabited parts of a building. One of these may be by means of fire brigade ladders. Limit of escape routes distances in a building duration of fire resistance of load bearing and separating constructions parts in relation to height of room.
Are there any other fire prevention requirements for private homes?	Yes, controls of heating plants in buildings through chimney sweep.

## Greece

Are fire inspections carried out for private residential premises?	Yes, fire inspections on private residential are carried out.
Is there a requirement for smoke detectors in residential premises?	In high-risk areas (boiler rooms, fuel tanks etc).
Smoke detectors, percent	10%
Are there any other fire prevention activities that are mandatory for residential premises?	Yes, in residential premises near forest areas
Are there any other fire prevention requirements for private homes?	Only for high rise residential buildings.

## Ireland

Are fire inspections carried out for private residential premises?	Not when they are occupied. A high proportion of new domestic buildings are currently subject to a housing inspection, which includes fire safety, at the end of the construction stage. However, this system is due to end soon.
Is there a requirement for smoke detectors in residential premises?	Since 1992 it has been mandatory to provide smoke detectors in newly constructed houses/ apartments and since 1998 the smoke alarm system must be powered by the mains electricity system –rather than be solely reliant on batteries. The cost of a battery powered alarm is around €6. It is <u>not</u> mandatory to have them in pre-1992 houses. The National Safety Council strongly advises that they should be installed in all houses, and a variety of local programmes have been undertaken to install them in the houses of the elderly. It is government policy to provide them in all public housing.
Smoke detectors, percent	No national study has been conducted, but one study (NSC) suggests a figure of 58% of homes have smoke detectors. The percentage which are operating effectively (live batteries etc) is not known.
Are there any other fire prevention activities that are mandatory for residential premises?	The design and construction of residential premises are governed by Part B (Fire Safety) of the Building Regulations, 1992 – 2002 Relevant technical guidance covers: the layout of escape routes, including open able window sections, other passive fire safety measures. There are no other mandatory fire safety measures for domestic situations, other than fire testing and labelling of furniture.
Are there any other fire prevention requirements for private homes?	The currently approach to fire prevention in the home by the National Safety Council takes the form of advice to householders and an education program for primary schools see <a href="http://www.nsc.ie">www.nsc.ie</a> for information. A major review of Fire Safety and Fire Services in Ireland (2001) has recommended an integrated ‘Community Fire Safety’ approach, considering that the vast majority of fire deaths in Ireland occur in the home. This approach is likely to be developed and implemented over the next few years, and would see a significant shift for fire services from responding to incidents to an expanded role for fire-fighters as “ambassadors of the fire safety message”. The need for multi-agency involvement is also recognised as, for example, it is seen that those most at risk (elderly, living alone) will best be accessed via the public health system.

## Italy

Are fire inspections carried out for private residential premises?	Inspections are foreseen for residential premises higher than 24 meters.
Is there a requirement for smoke detectors in residential premises?	For private houses – flats and single ones – there are no prescription for the use of detectors. For social residences – dorms, colleges and similar , detectors may have to be installed , according to the outcome of the risk assessment and under the conditions provided by technical rules.
Smoke detectors, percent	Data generally not available, due to the fact that the presence of detectors is not already decided, but it is determined on a case-by-case basis, according to the above-mentioned parameters.
Are there any other fire prevention activities that are mandatory for residential premises?	Yes, they concern the building and structural characteristics related to Passive Protection, Active Protection plants, Fire Response requirements, fire load restrictions, provisions related to the distribution features of premises (exits).
Are there any other fire prevention requirements for private homes?	As already indicated, civil residential premises are subject to inspections if higher than 24 meters. Buildings higher than 12 meters are subject to specific requirements too.

## Norway

Are fire inspections carried out for private residential premises?	Fire inspections by the fire services are not mandatory in private dwellings. The local electrical safety inspection authorities make inspections, regularly but seldom.
Is there a requirement for smoke detectors in residential premises?	Yes
Smoke detectors, percent	Approx. 97%
Are there any other fire prevention activities that are mandatory for residential premises?	Yes, chimney sweeping. It may be additional requirements in residents for people with special care needs.
Are there any other fire prevention requirements for private homes?	Yes, fire extinguishing equipment

## Portugal

Are fire inspections carried out for private residential premises?	Only in buildings above 29 meters.
Is there a requirement for smoke detectors in residential premises?	Yes, in public and tourist buildings
Smoke detectors, percent	80% in tourist buildings/hotels and residential 0% in private homes
Are there any other fire prevention activities that are mandatory for residential premises?	Yes, in underground residential parking , and active and passive fire safety measures, equipments to first intervention, in tourist buildings
Are there any other fire prevention requirements for private homes?	Yes, passive fire safety and structural measures like compartmentalization. The National Fire Service and Civil Protection, distributed small publications to public knowledge concern the prevention measures for private homes

## Sweden

Are fire inspections carried out for private residential premises?	No, fire inspections on private dwellings is not mandatory.
Is there a requirement for smoke detectors in residential premises?	Yes. The SRSA published an information sheet on smoke detectors in residential premises that highlights the obligation to install smoke detectors.
Smoke detectors, percent	68% of all dwellings. In small houses 84% and in flats 50% (1997)
Are there any other fire prevention activities that are mandatory for residential premises?	Yes, chimney sweeping
Are there any other fire prevention requirements for private homes?	No

## The Netherlands

Are fire inspections carried out for private residential premises?	No, only 1 local government carries out fire inspections on local premises (2001)
Is there a requirement for smoke detectors in residential premises?	Not for existing building but with the enforcement of the new Building Act this is a requirement for al new buildings.
Smoke detectors, percent	Approximately 1 million smoke detectors are sold. This means that in every 1 of ten private homes a smoke detector is present.
Are there any other fire prevention activities that are mandatory for residential premises?	No
Are there any other fire prevention requirements for private homes?	No

## UK

Are fire inspections carried out for private residential premises?	No
Is there a requirement for smoke detectors in residential premises?	All new private or commercial residential premises are required to provide smoke detectors in accordance with government guidance or the appropriate British Standard.  Fire Brigades undertake many campaigns to encourage the ownership of smoke detectors in private homes. Many public authorities and private housing associations provide smoke detectors.
Smoke detectors, percent	Surveys suggest that about 75-80% of domestic properties own a smoke alarm.
Are there any other fire prevention activities that are mandatory for residential premises?	All residential premises, other than individual private dwellings, are required to have an appropriate level of fire safety. This will depend on the nature and use of the building.
Are there any other fire prevention requirements for private homes?	For individual private homes – No.



# 16. Supervision and inspection

**The current state of supervision and inspection, and the views of the Member States on future needs. E.g. frequency of inspections, training of inspectors, costs for inspections, criteria for the selection of sites to be inspected.**

## General findings

In most countries fire brigades officers do the fire inspections. The objects that shall be inspected and the intervals are in some countries regulated by national rules. In other countries it is decided locally what is sufficient and relevant. Cooperation between local authorities and jointly inspections (fire, building, work-place safety etc) are rather normal. Rules set out in permits to use buildings are checked and deficiencies on the building construction are reported to local building boards. The responsibility of fire safety is at the "person in control". That is underpinned in several answers and also that inspections improve fire safety awareness. The inspecting authorities take no responsibility of the safety.

## Answers from the countries

### Austria

The provisions concerning the construction laws (e.g. length of escape routes, construction features, covering features etc.) are monitored in some Austrian states (e.g. Stmk) every two years (Feuerbeschau).

The Austrian Ministry of Trade put the states in charge to inspect buildings periodically. The inspections (gewerbebehördliche Überprüfung) fall under the responsibility of authorities of the district (Bezirkshauptmannschaft). The time intervals differ (e.g. in Vienna special buildings are monitored at least every 5 years).

### Belgium

Local fire officers are delegated, by the local authorities responsible for the fire brigade, to carry out inspection. A fire inspection is carried out by a local fire officers by request of local authorities (mayor)

### Denmark

The Danish Preparedness Act entitles MIH to draw up departmental orders which authorises DEMA to draw up regulations that establishes inspection intervals for the type of sites that should be inspected. It also entitles DEMA to draw up regulations that describe the duties for the owner/caretaker of places subjected to fire inspections. The fire inspections shall ensure that owners/caretaker (of buildings) follow these regulations. The local authority responsible for the fire brigade delegates local fire officers to carry out inspections.

### Finland

Local rescue authorities carry out fire inspections. Those objects where inspection is to be carried out annually are regulated, for other objects the municipality can decide the inspection intervals. Ministry of the Interior has given guidelines on this.

As the fire inspections cover also residential dwellings the legislation needs to be quite detailed e.g. when it comes to what powers the inspector has and how the inspections need to be recorded.

## Germany

State regulations govern responsibilities and conduct of fire prevention inspections. The regulations are not uniform throughout the states. Therefore the most frequent regulations follow:

Fire prevention inspections are conducted by fire brigades in the larger cities, by fire protection offices in the counties.

These fire brigades or fire protection offices are notified by the construction licensing authority about construction of special buildings or they participate in the permit procedures or are informed by other means about new buildings.

Regulations on fire prevention inspections govern the type of buildings subject to fire prevention inspections. The responsible inspectors compile a list of buildings according to building type and order the fire prevention inspections or they conduct the inspections within the prescribed time frames with a maximum of 5 years. As a rule these inspections should be conducted jointly with the safety inspection of the building authorities and with the participation of the business inspection authority. For practical purposes and a variety of reasons this hardly takes place.

The inspector compiles a deficiency report upon an fire prevention inspection. Construction deficiencies are reported to the building authorities which is responsible for the orderly condition of buildings. The operational and technical deficiencies are a responsibility of the fire brigades. The building owner or user receives the deficiency report.

A meeting with the owner or occupiers of the building, the building authority, and the fire brigade establishes the time frame and sequence of correcting the deficiencies. Under special circumstances a fine or coercive measures to include condemning the building may be ordered.

## Greece

Fire inspections are prescribed by Fire Brigade rules. Additionally, continuous support and guidance is provided to the fire officers by H.F.C.H. Each building is inspected approximately every 2 years (the above period depends on fire brigades facility). The training of inspectors is performed at Fire Academy.

The inspections cost is covered by the Greek Government and has not been documented. The selection of sites to be inspected depends on several factors such as the building's owner application for a fire protection certificate, an appeal, the fire risk of the site, the date of the last inspection, random inspections etc.

## Ireland

As described above, the Fire Services Act, 1981 is the primary legislation governing fire safety activity in Ireland. While primary responsibility is clearly on the 'person in control', this legislation also enables fire officers to be involved in inspections in accordance with specific provisions, and gives "enforcement powers" to fire authorities. As explained, a vast

array of buildings are covered by the Act, so it is not intended that fire officers should or could inspect all buildings. Each local authority is encouraged to develop its own plan for inspections, according to local priorities, which can change over time. The legislation does not specify frequency of inspection or other such matters. It is clear that, in practice, the definition of “inspection” encompasses a wide variety of activities, ranging from cursory checks on limited, specific issues, to very detailed assessment and reports on entire buildings.

As described earlier, a planned amendment to this Act is intended to increase the range of enforcement options available to fire authorities. Many of these have emerged in practice since the fire safety legislation was drawn up in 1981, and some are drawn from Food Safety and Health and Safety legislative codes. Among the significant provisions is one to enable a fire authority to request the person in control to have an assessment of the premises carried out and reported upon by a competent fire safety professional. This is seen as underpinning the fundamental legislative responsibility on the ‘person in control’, rather than transferring the responsibility to the inspecting authority.

The concept of fire safety programs targeted at specific sectors, rather than a universal inspection approach, also supports this approach. In this approach the following steps are usual:

- Central government develops objectives for a particular sector;
- A Guide to Fire Safety in that sector is published and launched;
- The Guide is disseminated to the relevant target audience via the web, at seminars organised by the National Safety Council and/ or the local authorities and by mail shots.
- A self-appraisal process is undertaken by the person in control of individual premises, and appropriate fire safety management (and passive and active measures if required) put in place and reported to the local authority, or other state registration body.
- If concerns remain about a particular premises, or if little contact is evident, then inspection and enforcement procedures can be brought to bear.

## Italy

The act DPR 577/1982 provides for two kinds of inspections: for activities subject to a control for the release of the Fire Prevention Certificate inspections under ex-art. 14, on the occasion of a communicated danger, independently from the way it occurred.

Moreover, D.M. 16/2/1982 identifies activities subject to inspections and their frequency. The main safety rules on working places – D.P.R. 547/1955, D.P.R. 689/1955 and finally legislative decree 626/1994, that implements several European guidelines in this field, identify the National Fire Brigade as control authority.

Inspections for the purposes of justice are conducted also because the fact that Fire Brigade Personnel are Criminal Police Officers or Policemen, according to their titles, with specific competences.

Finally, D.M. 4/5/1998 regulates how requests of inspections have to be submitted and which documents must be produced.

In the field of Activities related to Major Accidents, inspections are carried out by Inspecting Commissions, appointed by Regional Technical Committees, in view of technical and preliminary assessment. Inspections are also provided for in view of the examination of the Safety Management System, in accordance with Legislative Decree 334/1999.

## Norway

Local fire officers carry out inspections on behalf of the local fire authorities. The guidelines for fire inspections lay down the intervals and prescribe a list of objects or buildings that should be inspected. During the last 10 to 12 years fire prevention has been a major issue to the Directorate for Fire and Electrical Safety. We have succeeded in raising the number of local fire prevention officers to a total of about 500 man-labour years. The directorate also supports the municipalities through development of methods, support and guidance for the supervision that is carried out by the fire prevention officers.

## Sweden

Local fire officers are delegated, by the local authority responsible for the fire brigade, to carry out inspections. The SRSA provides inspection intervals and a list of sites that should be inspected. The SRSA supports the municipalities via the development of methods, support, and guidance for the supervision that is carried out in the form of fire inspections, i.e. inspections to ensure that owners/occupiers (of buildings) have taken the fire prevention measures that can reasonably be expected of them.

## The Netherlands

Local Fire inspections are based on the Fire Services Act of 1985. Every building that is obligated to have a use-permit has to be inspected. There is no regulation on the frequency of inspections. The local authorities are responsible for the planning and conducting of sufficient inspections. In the near future local authorities (inspection bodies) will be obliged to present an inspection plan (about priorities!) and an annual evaluation. Special attention is given to the tools of the inspectors: means to value and effective penalties. Inspections should not only improve the fire safety (direct effect) but also the safety awareness (indirect effect). Legislation is adjusted or will be changed in the near future to ease the task and clarify the role of inspectors.

Specific fire Inspections are carried out for:

- buildings (non residential) containing over 50 people
- buildings for storage of substances that are flammable or dangerous in case of fire
- buildings where more than 10 people spend the night that are not residential (hotels, hospitals)
- buildings for day-care for more than 10 children under 12 years of age or more than 10 people with physical or mental disabilities

The Netherlands Institute for Fire Service and Disaster Management (Nibra) was founded by the ministry of the Interior as a training institute, but also developed a reputation as a multidisciplinary centre of knowledge and research. The members of the local inspection bodies get their training with Nibra.

## UK

The legislation currently applying in the United Kingdom is rather complex. A different legislative process applies in England & Wales, in Scotland and in Northern Ireland. In addition the Channel Islands and the Isle of Man have separate legislative assemblies applying separate legislation.

There are currently well in excess of 100 separate elements of legislation that cover fire safety in buildings in use. In the majority of buildings fire safety is covered by either the Fire Precautions Act or the Fire Precautions (Workplace) Regulations, although specific elements of legislation may also apply according to the use the building is being put to, such as Theatres Act (for a building being used as a theatre) or the Licensing Act (for a building selling alcohol).

In the case of any new building work, or material alterations, the fire safety issues will need to be taken into account as part of the approval process under relevant building legislation.

The UK government proposes major changes to the legislation covering fire safety in buildings in England & Wales, which it is intended will come into effect in the next 1 or 2 years. It is anticipated that this will place enforcement responsibility for the majority of buildings with the fire brigade. It is anticipated that there will be similar changes in Scotland and Northern Ireland at the same time.

# 17. Common faults

<b>What kinds of faults are most common?</b>
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## General findings

Faults on escape routes, fire compartments and walls and fire risks are the most common problems in most countries. But also management, unauthorized or inappropriate use is reason for concerns. So are new staffs for buildings with new regimes that can lead to bad practices.

## Answers from the countries

### Austria

Open fire doors

### Germany

Primarily there are deficiencies concerning emergency escape routes. Other frequent deficiencies are with unauthorized use of the building, impediment of function walls, or with the inside fire protection procedures.

### Greece

Most common faults are related to escape routes, fire compartments and fire risks.

A serious problem is the fact that there is no usually compliance of the building materials and components fire properties with European fire standards.

### Ireland

In older buildings the means of escape and structural fire precautions may be inappropriate for the current use of the building. These buildings also tend to have inadequate or to lack fire detection and alarm systems.

In newer buildings the problems are usually failures in the fire safety management regime. It is our finding that premises, which are well managed in general, are also diligent about fire safety management. The state of the fire safety register is usually a good indication of the status of fire safety on a premise. In buildings, which have high staff turnover, new staff may not have been inducted or trained in their fire safety duties. This can lead to bad practice such as furniture impeding emergency exits etc.

### Italy

The most common faults are those concerning heritage buildings, which are numerous in a country like Italy and especially buildings for which it is particularly difficult to observe the new rules. Many faults have also been noticed in Safety Management.

In commercial and productive activities, sometimes rules are disregarded, whose implementation would bring to interruptions of the works or to slowdowns in the production processes.

## Norway

The most common faults relates to the likelihood of smoke in escape routes, faults on firewalls, and unsatisfactory sectioning of buildings. There are also faults regarding unsatisfactory sprinkler systems in buildings.

## Sweden

Faults on escape routes are most frequent (59%), followed by fire compartmenting (15%), and fire risks (12%). These figures come from municipal fire & rescue services.

# 18. Internal check systems for fire safety

<b>Some sites have internal check systems. Do they affect the fire safety inspections performed by the municipality?</b>
--

## General findings

Internal check systems are used as starting points for inspections and the texts gives an impression of the understanding of fire safety in the object. The local authority can then use the findings to priorities among sites to inspect. The duration of inspections can be shorter, less frequent and in some cases cheaper for all involved.

## Answers from the countries

### Denmark

Not for the time being, but there are considerations about changing this.

### Finland

Where the internal checks are recorded they can be used as a starting point for fire inspections. In larger industrial premises internal checks and other documented controls form an essential part of a fire inspection.

### Germany

No, official fire protection requirements are always a minimum standard. When fire prevention inspections incur a fee, because of - “internal check systems”- the duration of an inspection is shorter and thus cheaper.

### Greece

The internal check systems of these sites do affect the fire safety inspections performed by the fire officers, if they are in accordance to Fire Regulations or even improve the objectives and the requirements of the legislation.

### Ireland

Where a fire safety register is required, relevant checks/ servicing of equipment etc made by staff of the organisation will be recorded. This will frequently be the starting point for an inspecting officer. Clearly the impression gained from the register will influence the following steps.

### Italy

Some activities must have an internal check system. All the activities are obliged to make an analysis of their own safety conditions, following the prescriptions of the Decree 10 /3/1998. The results of this analysis and the activating of what has to be set up, after this from this analysis, are checked by the public authorities



## Norway

Sites have mandatory requirements for systematic fire prevention work. This is to ensure that the owner of buildings or the proprietors of the buildings understands their responsibilities as it is stated in the fire prevention legislation (ref. also the Internal Control Regulations). All owners of buildings are mandatory to point out a local employee responsible for the fire prevention work. This person has to attend the inspections carried out by the local fire prevention officers.

## Sweden

The proposed legislation suggests mandatory "systematic fire prevention work". This "management system" will also help owners or proprietors to understand their responsibilities and to communicate it to the inspector. These "management systems" require new routines for inspections. The idea behind the change of system is to make it easier to prioritise among sites selected for inspection.

## The Netherlands

No information on this subject is available. Inspections are locally conducted by local inspectors. Information on the local strategies and problems is sparse.

## UK

These are usually seen as an additional check, which will often have the effect of reducing the frequency of inspections.

# 19. How are fire inspections performed?

<b>How are fire inspections and other forms of supervision performed? What kinds of fire risks are inspected? Do any other agencies, apart from the fire brigade, carry out fire safety inspections?</b>
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## General findings

All kind of fire risks is inspected. That includes, in most answers, both technical matters and procedures such as management and training of staff. Other local inspection authorities besides fire brigades can include fire safety matters. There are some linking to permits and business that are used to enforce fire safety regulations.

## Answers from the countries

### Austria

In accordance to the industrial code buildings which are used by a great number of persons (shopping centres, hotels, entertainment centres) or big industrial buildings are inspected every 5 years. The reports of the inspection of fire safety installations are checked for faults. The building is inspected for obvious faults.

The fire brigade is not an authority and has no permission to inspect buildings. The authorities inspect buildings and normally consult the fire brigade.

Fire safety installations (fire detection systems, smoke and heat exhaust ventilation systems, sprinklers etc.) are inspected periodically (every year or every two years) by notified bodies. The authorities refer to their reports.

### Belgium

All kinds of fire risks are inspected; escape routes, fire resistance, alarm, sprinklers, extinguishing systems, storing of flammables electrical faults etc

Many regulations come also from the RGPT ( general rules for protection of workers) that include fire precautions to protect employees.

### Denmark

All kinds of fire risks are inspected. This includes built-in fire prevention, escape routes, alarm and extinguishing systems, training, handling and storing of flammables, electrical faults, interiors, tidiness, routines. Fire prevention regulations can be found in lots of different laws. Many regulations come for example from the Occupational Safety and Health Act and include fire precautions to protect employees. Inspectors from other authorities (electrical safety, workplace safety) can also make observations on fire safety.

## Finland

Fire inspections cover all fire and accident risks and in principle all legislation dealing with fire protection and accident prevention. In practise emphasis is on fire prevention, evacuation safety and fire safety management.

Some other authorities may carry out inspections but those cover rarely fire safety issues. Recent trend is to encourage joint inspections with e.g. health inspectors.

## Germany

The fire prevention inspection covers all equipment and fire protection procedures. For this reason - and if possible - the building authorities and in case of businesses, the business inspection authority should be involved. Through regulations the inspection intervals of the various authorities have been harmonized in recent years to 5 year periods.

## Greece

Supervision and fire inspections are mainly performed in order to certify that the approved plans about fire protection are implemented. All kinds of fire risks and means of fire safety (passive and active) are inspected such as built-in fire protection, escape routes, underground areas, alarm and extinguishing systems, floodlights near flammable materials, training, handling and storing of flammable materials, exposed hot surfaces, electrical faults, interior decorations, smoking areas, etc.

In addition, if there is an appeal about fire safety, the competent fire officer rush on the inspection as soon as possible.

## Ireland

The officers of the fire services perform and report on fire safety inspections in accordance with fire safety legislation, and the locally determined priorities as discussed above.

In Ireland there are many organisations concerned with different aspects of fire safety. For instance fire services would have significant contact with:

The Health and Safety Authority re fire safety in places of work

Health services re registration of child care facilities

Tourist authorities re registration of hotels, hostels and other accommodation, etc

By and large however, the fire service is the only body, which undertakes specific fire safety inspections on behalf of the state. Private fire safety consultants may be engaged by a person in control of a premise to assess and report on a premise. This assessment may be required by a state agency, which intends to enter the premises on a register (eg Child Care premises), or to use the property directly (eg to accommodate asylum seekers).

The Review Report 2002 highlighted the need for and made a recommendation that there should be a "Public Safety Liaison Committee" in Ireland to facilitate co-ordination on safety issues across state agencies. A proposal is currently being developed for linking the fire safety systems with tourist registration systems. This proposal is in the early stages of consideration.

## Italy

Inspections are performed both through the control of documents and visual analysis, and furthermore with specific examinations, also through the use of appropriate instruments, when deemed necessary by the Inspector.

Inspections concern not only fire prevention but also all the institutional tasks of Fire Brigade. No authorities/agencies, apart from Fire Brigade, carry out fire safety inspections.

## Norway

The fire inspection is similar to what is described by Sweden. At the present a considerable part of the inspections are related to how the owners of the buildings can document their fire safety system. In addition the inspectors verify various parts of the fire prevention documentation, like how the escape routes are designed, or how the sprinkler system is functioning.

The Act on Supervision of Electrical Installations and Electrical Equipment requires most electrical utilities to carry out inspection within their supply areas. The inspection body is called the local electrical safety inspection authority (DLE). The electricity utilities therefore function here as part of the public inspection apparatus, and carry out inspection under the control of the Directorate for Fire and Electrical Safety (DBE).

## Sweden

All kinds of fire risks are inspected. This includes built-in fire prevention, escape routes, alarm and extinguishing systems, training, handling and storing of flammables, electrical faults, interiors, tidiness, routines. Fire prevention regulations can be found in lots of different laws. Many regulations come for example from the Occupational Safety and Health Act and include fire precautions to protect employees. Inspectors from other authorities (building, electrical safety, workplace safety) can also make observations on fire safety.

## The Netherlands

The fire brigade carries out the inspections focussed on fire safety. Fire risks inspected are: Furnishings, exits, escape routes, installations, engines, ventilation, guarding and inspection, flammable materials, waste, fire instructions and evacuation plan, maximum total present people, fire extinguishers. Other inspections can be carried out based on other regulations for example from the Labour Act and include fire precautions to protect employees.

## UK

After any initial approvals have been given under building regulations (where necessary) the responsibility for inspections of premises passes to the enforcing authority.

There is currently a very wide range of legislation covering the provision of fire precautions in buildings such as theatres, cinemas, licensed premises, care homes, etc. In all cases the legislation requires the fire brigade to be consulted before approval is given and that subsequent inspections of such buildings is carried out by the enforcing authority.

In such buildings as hotels, offices, shops and factories, the fire brigade are the direct enforcing authority. Again the legislation requires the fire brigade to carry out subsequent inspections of the buildings for which it has responsibility.

Subsequently it is the enforcing authorities or fire brigades decision as to which buildings are inspected. Guidance for fire brigades, as to which buildings should be inspected, has been developed by central government and is soon to be published.

In buildings such as theatres, cinemas, licensed premises and care homes, or buildings that require a “fire certificate”, such as certain hotels, offices, shops and factories, the enforcing authority or the fire brigade must inspect and give approval to all new applications.

Some limited inspections are carried out by other authorities but in the new legislation it is anticipated that the responsibility for enforcement in all buildings will pass to the fire brigade

## 20. How to ensure that safety objectives are met

**How does the responsible organisation ensure that fire safety objectives are met? Are there any means to enforce them? What happens if someone fails to meet the standards and demands of inspections?**

### General findings

The means to enforce regulations varies but most nations have a possibility to close buildings, withdraw permit, interrupt business or use other economic sanctions. Fines are a normal sanction.

### Answers from the countries

#### Austria

The results of the inspections are laid down in reports and if infringements are identified the conformity with the law must be proved within a given period of time. As penalties normally fines have to be paid but there exists also the possibility to lose the licence which is necessary to use a building.

#### Belgium

If some safety objectives aren't met, the local authorities can close the building. A limit time is given to building proprietor to carry out necessary works. A commission of dispensation exists to give equivalent measures

#### Denmark

If the fire inspection shows conditions that indicate a high fire risk, the fire inspectors are authorised to prohibit further use until the fire safety is acceptable. Shortcomings have to be dealt with within a certain time limit. If faults are not remedied there can be fines and, in aggravating circumstances, prison for up to two years. The general legal system is used and there is an appeal system.

#### Finland

The range of enforcement options is quite wide and regulated in detail. The options include written advice or recommendation, written instruction to carry out specified measures and requirement to take specific action or close. The instructions and requirements may be enforced with a conditional fine. They may also be prosecuted for offence that can result in fines.

#### Germany

Fire protection targets are inspected during the regular fire prevention inspections. Fire prevention inspections must be announced with sufficient lead time.

In case of specific reports regarding deficiencies or in case of reports from fire fighting events, unannounced inspections may take place. Are deficiencies found an agreement is

reached as to the timeframe the deficiencies will be corrected. These are enforced by the fire brigade or building authority. Should the agreement not be adhered to, the authority may apply coercive measures. These may be fines, corrective action ordered by the building authority all the way to the condemnation of a building. All these are governed by the principle proportionality.

## Greece

As mentioned above, fire officers ensure that fire safety objectives are met, by inspections in order to realise that the approved fire safety plans are implemented.

Those objectives can be enforced by increase of the number of fire officers involved and further training of them, which will result in the increase of inspections.

If the building owner or user fails to meet the standards and demands of inspections, he is not provided by the relevant fire safety Certificate. This usually cause interruption of business until the improvement of safety measures in order after a new inspection be provided by the Fire Certificate and further the Building (business or use) Permit.

In all cases of legislation violence, justice is informed.

## Ireland

There is a range of enforcement options available to the relevant fire authority having regard to the severity of their concerns about fire safety in a particular premises. This range of options is currently being expanded and given a fresh legislative underpinning by the amendments in the Bill currently before the legislature. The options include, or will include:

- Giving advice, orally and in writing;
- Recommending specific actions, orally and in writing;
- Requiring an assessment to be carried out and reported, including preparation of a program of works;
- Requiring specified works to be carried out in a time-frame;
- Input to district court licence applications;
- Oral and written warning;
- Oral or written instruction to close or take specific action (Closure notice);
- Fire Safety Notice (in respect of potentially dangerous building);
- Prosecution for offences (failure of general duty and/ or non-compliance with above);
- Section 23 Order (High Court).

One of the issues highlighted by the Review Report 2002 was the need for consistency across all local authorities in the field of fire safety. Ideally we would like to develop a Risk/Protection assessment framework to assist officers in deciding on a course of action in any particular case. There is a need for balance in the use of particular enforcement options, and some are regarded as “resource intensive” in application.

## Italy

For regulated activities, objectives identified by the technical rules that have to be applied are assessed.

For not regulated activities, assessments by engineers are carried out, on a case-by-case basis. According to the policy of educating people to higher levels of safety, and not only of punishing the lack of law observance, the decree 758/1995 provides that the following procedures must be followed, in case rules concerning safety are non observed:

- the Authority, the National Fire Brigade, that notices the non-observance of rules, imposes the payment of a reduced economic sanction, and orders appropriate safety measures, setting time allowed for their implementation.
- the Authority informs the judge about violations noticed, about time limits for the implementation of measures prescribed and about the sanction inflicted.
- once the above mentioned time limits have expired, the Authority checks if the safety measures have been implemented. If so, the issue is over. Otherwise, the whole matter goes out the administrative framework and is taken back to the criminal law.

## Norway

A main purpose for the inspection is to verify to what extent the available documentation and the real life situation do correspond. Shortcomings have to be dealt with within a certain time limit, often a couple of months. There can be fines if faults are not remedied, and the fire legislation also contains an appeal system.

## Sweden

By inspections and comparisons. Shortcomings have to be dealt with within a certain time limit. Permit to serve alcohol are connected to fire safety regulations. There can be fines if faults aren't remedied; and there is an appeal system.

## The Netherlands

Every citizen is obliged to know the law and act accordingly. Demands for building can be found in legislation and a proprietor is obliged to take notice of fire legislation. Building and use permits will be granted when fire safety objectives are met (in theory, practice sometimes differ). Inspections are made. Shortcomings have to be dealt with within a certain time limit. There can be fines if faults aren't remedied or the permit(s) may be withdrawn; and there is an appeal system.

## UK

The responsibility for the provision of adequate and appropriate fire safety arrangements lies with the occupier(s) of the building. The inspection regime is the means for monitoring that these responsibilities are being met.

In all cases failure to meet these responsibilities is a criminal offence and, where appropriate, the fire brigade do prosecute offenders in court. Courts usually hand down very large fines, especially where the offence is carried out by a large company.



## 21. Fire inspections, numbers, staff training and fees

**Number of buildings and annual fire inspections? Types of constructions are inspected? Any mandatory training for fire inspectors? Is it possible to charge a fee for a fire inspection?**

### Number of buildings and annual fire inspections

Country	Number of buildings subject to fire inspections	Number of annual fire inspections								
Austria	Unknown	Unknown								
Belgium	Unknown	Unknown								
Denmark	41.427 (2001)	28.220 (2001)								
Finland	1,4 Million.	41.469 subject to annual								
Greece	All buildings	60.000 (2002)								
Ireland	<p>Section 18 (2) of the Fire Services Act, 1981 places the responsibility for fire safety on the ‘person in control’ of premises. This section of the Act applies to practically all buildings, other than domestic buildings, which are excluded.</p> <p>Many thousands of buildings therefore are potentially subject to fire inspection, but in practical terms, certain categories of buildings are prioritised. The legacy of the disastrous Stardust fire in 1981 still informs priority-setting here, and “Places of Public Resort” such as pubs and dance venues are among the most frequently inspected.</p>	<p>There are three principal categories of fire safety inspection, deriving from different sections of the Fire Services Act, 1981</p> <p>S 13 –Applications for Planning Permission are referred to fire services</p> <p>S 24 – Premises which apply for District Court Licences are inspected</p> <p>S 18 – Priority category buildings are inspected, and “during performance inspections” are conducted</p> <p>The following table shows the numbers of building inspections under each category in 2000</p> <table><tr><td>Section 13</td><td>2738</td></tr><tr><td>Section 24</td><td>3475</td></tr><tr><td>Section 18</td><td>3475</td></tr><tr><td>Total</td><td>11,997</td></tr></table>	Section 13	2738	Section 24	3475	Section 18	3475	Total	11,997
Section 13	2738									
Section 24	3475									
Section 18	3475									
Total	11,997									
Italy	191,000 certificates of fire prevention are issued. Each certificate follows a preliminary consideration of the project and an on-the-spot inspection.	No answer								
Norway	35.716 (2001)	22.791 (2002)								
Portugal	29.806 (2002)	5000 (2002)								
Sweden	85.000 (2000)	36.000 (2000)								
The Netherlands	179.000 (2001)	45.500 (2002)								
UK	England & Wales - 1,212,085 Scotland - 52757 Northern Ireland – 5,036	England & Wales – 561,442 Scotland - 13867 Northern Ireland – 8,194								

## What types of constructions are inspected?

### Is there any mandatory training for fire inspectors?

Country	What types of constructions are inspected?	Is there any mandatory training for fire inspectors?
Austria	In accordance to the industrial code buildings which are used by a great number of persons (shopping centres, hotels, entertainment centres) or big industrial buildings are inspected every 5 years	No
Belgium	New constructions except residential houses	Yes it is regulated by fire schools
Denmark	Buildings with many people in the same room (e.g. meeting halls, restaurants, discotheques), hotels, shops, day-care institutions, schools, heritage buildings and industrial premises with special fire risk.	Yes, it is regulated by the Danish Emergency Management Agency
Finland	All buildings. Annual inspections in: 1) hotels, hostels, camping sites, etc. for over 10 guests 2) hospitals, nursing homes, prisons, etc. having over 5 places 3) commercial premises and places of assembly which are for larger public, such as shops, schools and theatres of over 500 m <sup>2</sup> , restaurants for over 50 customers, day-care centres for over 25 places 4) larger industrial premises, storages or farms 5) premises where manufacture or storage of flammable or explosive substances may cause danger for life, property or environment 6) premises that have automatic fire alarm or sprinkler system.	Yes, based on Rescue Services Act. Training requirements will be withdrawn with new legislation entering into force on January 2004
Germany	Assembly facilities (theatre, cinema, football stadium...), schools, hospitals, hotels. Wholesale and retail facilities > 2000m <sup>2</sup> , nursing homes, industrial facilities, storage facilities, high rise, other large structures representing a special danger to people or fire and explosive danger	Here is special training for fire inspectors. Fire fighters receive extensive qualification in the course of their training. They have to have sufficient actual fire fighting experience and participate regularly (once or twice a year) in a central experience exchange at state level
Greece	All types of constructions are inspected. Examples: hotels, schools, offices, shops, assembly, residences, industrial plants and warehouses, parking facilities and fuel stations, marines, camping sites etc.	Yes, it is regulated by the Greek Fire Academy.

Ireland	As noted above, priority categories are determined by each local authority, but in general, places of public assembly are prioritised. A particular category may be targeted in a specific year eg pre-school child care premises were inspected to coincide with new regulations and a new publication on fire safety in that sector.	As discussed above, officers working on fire safety are generally required to have a relevant degree on recruitment. Subsequently the Fire Services Council annual training program offers appropriate initial and on-going training for these officers. Specific courses have been devised in recent years to enable non-graduate officers to undertake appropriate inspection work. While this training is not mandatory, a very high percentage of officers avail of the training offered. In addition fire authorities support (by way of paying fees and giving time) graduate officers to undertake post-graduate studies, and non-graduates to undertake degree courses. In the post-graduate field, one university offers a one-year diploma course in fire engineering, and another offers a two-year masters course. Both courses are undertaken on a part-time basis - the diploma involves lectures on Friday/ Saturday and the masters involves a full-time commitment one week in four. Participation is voluntary.
Italy	97 types of activities: -civil -industrial -commercial subject to a preliminary consideration of the project and to the issue of the Certificate of Fire Prevention (see above). Inspections are also carried out for the surveillance on the places of work and for investigations for the purpose of the justice.	Since Fire Brigade Officers are responsible for inspections, their competence/legitimacy is related to the professional training received at the beginning of their career and afterwards. This training includes directions on how to carry out inspections. This course, which follows a public competition based on exams, lasts six months. It starts upon hiring and is mandatory. Also officers attend during their career refresher courses organized by the Administration and lasting different periods.
Norway	A) buildings and areas where fire may cause more than ordinary risk of loss of life, B) buildings, installations, stores, tunnels etc. which, due to their nature or the activities taking place inside them, are assumed to involve special risk of fire or risk of large-scale fire, or where fire may have serious social consequences, C) buildings and installations of culture-historical value to society	Yes
Portugal	Domestic buildings, commercial, industrial, school, health (hospitals)	In all Districts Coordination Center, there is technical with degree in engineering and architecture, to analyze the projects. A significant number of fire chiefs (volunteers and professional), also hold specific diploma and qualification in the fire safety field, in order to make fire inspections

Sweden	Meeting halls/buildings, industrial premises, hotels and restaurants, hospitals, airports, harbours, schools, department stores, camping sites, power plants, and other establishments that receive many visitors, particular venues presenting major fire risks.	Yes, it is regulated by the Swedish Rescue Services Act
The Netherlands	Examples: Meeting halls/buildings, industrial premises, hotels and restaurants, hospitals, airports, harbours, schools, department stores, camping sites, power plants, and other establishments that receive many visitors, particular venues presenting major fire risks.	No, although most of the members of fire inspection bodies received a specific training.
UK	Hotels (with a few exceptions). Factories. Offices. Shops. Hospitals. Boarding Schools. Theatres. Cinemas. Licensed Premises (Alcohol)	All fire service officers are required to undertake basic courses in fire safety. All Fire Safety officers are required to undertake further specialist courses.

## Is it possible to charge a fee for a fire inspection?

Country	Is it possible to charge a fee for a fire inspection?
Austria	No
Belgium	Yes
Denmark	No, but there are some plans
Finland	No
Greece	No
Ireland	Yes
Italy	Fees are fixed by the law.
Norway	No
Portugal	Yes, the owner pay a tax for the inspections to the National Fire Service and Civil Protection
Sweden	Yes
The Netherlands	No, local government is responsible for the inspections
UK	No

## 22. Fire brigade and personnel

Country	Pop. Mill.	Fire Brigades	Fulltime personnel working with fire safety
Austria	8	6 Professional Fire Brigades (Wien, Salzburg, Graz, Linz, Klagenfurt, Innsbruck. 4553 Voluntary Fire brigades 317 Industrial Fire brigades Total: 247827 Active fire fighters	Unknown
Belgium	10,2	Walonie : 85 Flandres : 165 Bruxelles : 1	Not available
Denmark	5,4	319 fire stations and 26 fire services on small islands. Approx. 3.700 retained fighters and officers. 5.200 part-time fire fighters (figures from 2001)	The exact number of people is not registered, but it is the same people who take care of handling the building cases, make fire inspections etc.
Germany	82.4	27 600 Full Time Fire Fighters in Public Fire Brigades 7 100 Full Time Fire Fighters in Company (Industrial) Fire Brigades 1.06 million Volunteer Fire Fighters	The 16 states have different regulations, therefore data is not collected
Finland	5,2	About 4.500 full-time personnel, about 9.000 part-time and voluntary.	Information not available, estimated at about 200 who work <u>only</u> with fire safety and accident prevention.
Greece	10,5	250 fire brigades. 9,800 full-time fire officers and fire fighters. During summer period, 5,000 seasonal fire fighters are hired. In addition, 6,000 part-time (volunteers) fire fighters are occupied (at least 4 shifts per month). Total 20,800 fire fighters	250 fire brigades. 9,800 full-time fire officers and fire fighters. During summer period, 5,000 seasonal fire fighters are hired. In addition, 6,000 part-time (volunteers) fire fighters are occupied (at least 4 shifts per month). Total 20,800 fire fighters
Ireland	3.96	1,206 full-time personnel and 1,952 Retained (part-time) fire fighters. This includes 150 senior officers, of whom 70 work primarily in fire safety activity.	Approx 70 officers are engaged primarily on fire safety work. It is policy to try integrate fire safety and operations to the greatest extent possible. The vast majority of senior officers working in fire safety are degree holders (mainly in engineering and architecture). A significant percentage of these also hold specific diploma and masters qualifications in the fire safety field. Training in fire safety inspections has been devised for other officers to enable them to participate in this work, and approximately 60 have taken this training in the last two years.

Italy	56	29.000 professionals	
Norway	4,5	2900 fulltime, 9535 part time, a total of 12 435	Approx. 500. The criteria of one fulltime, well qualified employee per 10.000 inhabitants in each fire service region are met.
Portugal	10	446 brigades with 41.630 fire fighters of which 32.940 are voluntaries. In summer a special device with 3344 fire fighters and equipment.	18 inspectors/coordinators, 14 technical/engineering and architects
Sweden	8,9	11,500 fulltime fire fighters and officers. The remainder are part-time. Total 18,900 (figures from 2000)	Approx. 580 On fire inspections alone 250 (figures from 2000)
The NL	16,2	488 fire brigades. 4500 professionals. The remaining are 22000 volunteers	
UK	58	48 (England & Wales), 8 Scotland, 1 Northern Ireland. Around 43.000 fulltime and retained	England & Wales – 2009, Scotland 259 Northern Ireland – 33

## 23. Costs of accidents and fires

<b>What is the estimated annual cost of accidents and incidents? What is included?</b>
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### General conclusions

It was difficult to answer the question but efforts are being made to estimate the costs from all accidents.

### Answers from the countries

Austria, Belgium, Ireland, Norway, Portugal

Unknown

#### Denmark

In 2001 DEMA published “The socio-economic costs of fire in Denmark” A total cost of app. 10,000,000,000 DKK was estimated, covering direct costs, indirect costs, fire prevention, preparedness and administration, see details at [http://www.brs.dk/uk/pub/Socio\\_economic/index.htm](http://www.brs.dk/uk/pub/Socio_economic/index.htm). (100 DKK = 7,5 Euro in febr 2004)

#### Finland

The total costs of home and leisure accidents has been estimated to be 2.5–4.0 milliard euros per year. Direct costs have been estimated to be 460–548 million euros. Direct costs cover medical care, daily benefits, disability pensions, police and rescue services, material losses and information and research.

#### Germany

There are no all-encompassing and usable statistics in Germany. According to the statistics of several states, there were fire damages to the amount of 1.061 billion Euro for the year 2001 (interpolated onto all of Germany). The use of fire brigades saved and triple amount of that sum.

#### Greece

The annual direct cost of fires in urban areas in Greece is estimated at 65 million €. This estimation comes from the each time incident commander; concerns direct damages and do not include any costs for various indirect damages.

#### Italy

The estimated annual cost of damages resulting from every kind of accidents is not available. As to the already mentioned intervention reports, a rough estimate of damages is specified in the document, when possible. Regarding fires, it has been estimated that the social costs deriving , amount to 0.15% of the gross national product.

#### Sweden

The annual direct cost of accidents in Sweden is estimated at 40,000 million SEK, and preventive measures to a total of 30,000 million SEK are undertaken. These estimations do

not include any costs for human suffering, destroyed ecosystems or loss of good will. The cost of human suffering has been estimated at 400,000 million SEK annually.

The annual insurance cost for fires is around 3,000 million SEK.  
(100 SEK = 9,2 Euro in febr 2004)

## The Netherlands

Annual costs of all fire brigades are 506 million euro. The costs include personnel, housing, material, fire fighting and accidents, management and maintenance. In 2000 fires caused a loss of approximately 723 million in Euro.

## UK

A recent Department of Health report quotes the estimated cost to the NHS of treating accidental injury and poisoning as £2.2bn per annum. This does not include rehabilitation costs. The report provides estimates of the costs of various types of accident with reference to studies conducted by appropriate government departments.

The estimated value of preventing the road traffic accidents in Great Britain in 2000, which involved injury to at least one person, was given as £12,170 million (at 2000 prices and values).

The cost to society of home accidents in the UK is estimated to be £25,000 million annually.

The cost to individual workers of workplace injuries and ill-health due to reduced income and additional expenditure is estimated at £7,000 million. The cost to employers is estimated to be between £3,300 and £6,500 million. The total cost to society as a whole, including pain, grief and suffering, and the individual and employer costs, is between £14,500 and £18,100 million (based on 1995/6 prices with net present value costs in future years included).  
(100£ = 146 Euro in febr 2004)



## Major project “Fire Prevention and other incidents”.

### *Basic facts and questionnaire*

**Overview of fire safety** - Describe the main legislation, national authorities and their responsibilities

<b>Brief facts</b>	<b>Country:</b>	<b>Population;</b>
<b>Personnel</b>		
Fire brigades		
Fulltime personnel working with fire safety		
<b>Statistics, fire brigades</b>		
Number of building fires during 2001		
Number of fatal fires and fatalities during 2001. What is included?		
How are the statistics from fire brigades collected?		
Is it mandatory to compile these statistics?		
How are the statistics presented?		
<b>Fire inspections</b>		
Number of buildings subject to fire inspections		
Number of annual fire inspections		
What types of constructions are inspected?		
Is there any mandatory training for fire inspectors?		
Are fire inspections carried out for private residential premises?		
Is it possible to charge a fee for a fire inspection?		
<b>Fire safety in residential premises</b>		
Is there a requirement for smoke detectors in residential premises?		
Smoke detectors, percent		
Are there any other fire prevention activities that are mandatory for residential premises?		
Are there any other fire prevention requirements for private homes?		

**National objectives and strategies for fire safety.** Strategies for fire safety will be identified and compared. The answers will identify how they were developed and how they are communicated.

**Are there any national objectives and strategies for fire safety in your country? If yes, what are they? Are they quantifiable? And at what level are they set?**

**How are these goals communicated? Are there any tools for checking on how well goals are achieved? How do various organisations work with such strategies?**

**Statistics and reports** National statistics will be compared as a base for further work. These will detail fires from different types of buildings or activities, and the number of fatal fires and their causes. Trends can be found in different Member States that indicate areas in which common action could be useful.

**How are the reports and statistics used?**

**Are there any other sources of information?**

**Is the data analysed or used in other ways in fire prevention work?**

**Requirements for fire prevention arrangements in buildings.**

Regulations in general. The involvement of fire prevention experts and fire brigades. Requirements for alarms, sprinklers, maintenance, furnishing, fire prevention documentation, and employee training.

**How are the Construction Product Directive, the interpretative document “Safety in case of fire”, and CEN standards included in building legislation?**

**Describe and explain how the building process works. When and how are fire safety issues handled? Are there any specific problems in this area?**

**Are there any requirements on the documentation for fire prevention arrangements in buildings?**

**Please describe the use of Fire Safety Engineering (FSE) including performance based codes and involvement from fire brigades. What are your experiences from fire fighting in buildings that have been designed using FSE? What long-term consequences do you predict as a result of the use of FSE?**

**Does the legislation permit retroactive fire safety demands on buildings? If yes, under what circumstances?**

**How do you deal with fire safety when it comes to equipment and furnishings?**

**Are there any special demands on fire safety in heritage buildings?**

**The current state of supervision and inspection, and the views of the Member States on future needs.** E.g. frequency of inspections, training of inspectors, costs for inspections, criteria for the selection of sites to be inspected.

**Describe the legislation for fire inspections.**

**What kinds of faults are most common?**

**How are fire inspections and other forms of supervision performed? What kinds of fire risks are inspected? Do any other agencies, apart from the fire brigade, carry out fire safety inspections?**

**Describe experience from inspections in buildings where a “fire safety design” method was used.**

**How does the responsible organisation ensure that fire safety objectives are met? Are there any means to enforce them? What happens if someone fails to meet the standards and demands of inspections?**

**Some sites have internal check systems. Do they affect the fire safety inspections performed by the municipality?**

### **Incident prevention (excluding fires)**

Fire brigades and national authorities responsible for fire prevention often have good knowledge about the causes and effects of a large range of everyday incidents and accidents. The study will examine if and how this experience is used in prevention.

**Describe the how fire brigade and any national authorities responsible for fire prevention are involved in general incident/accident prevention**

**Are any areas inspected besides fire safety?**

**What is the estimated annual cost of accidents and incidents? What is included?**

**Environmental and consumer safety can include fire prevention. How is this handled?**

## **Other topical issues**

**What are the main ongoing projects or problems in the field of fire prevention and fire safety in your country today?**

**Are there any specific areas that have been identified as crucial for future work?**

**Good examples of successful fire prevention programmes the results of which have been documented?**

## **European network within the field of Fire Prevention**

The role for a network will be examined. Fire safety is an essential safety factor in buildings but also for many products such as toys, vehicles, electronics, furniture and cloths. There are several European and other international groups dealing with this issue and fire safety is handled in many directorates with no single body clearly established to deal with “Community Fire Safety”. The study will examine the Member States expectations on such a body.

**What would be the purpose of such a network and what authority would this network have?**

**How should such a network be organized?**

**In what areas and fields should this network act? What should be the outcome from this work?**

**Name some specific topic/project in the field of fire prevention that should be prioritised and lifted to a European level.**

**Comment on and try to weigh up the pros and cons of such a network.**

## **Describe a typical fatal fire in your country**

