



Smoke: Fire’s poor relation? Think again. Smoke in building fires is far from innocuous. It spreads quickly and stealthily and how it’s held back to enable means of escape or to stop it entering into flats and apartments needs to be seen to be believed.

Its definition: “a visible suspension of carbon or other particles in air, typically one emitted from a burning substance¹” has more meaning as smoke inhalation: “the poisoning of the lungs caused by inhaling large quantities of toxic fumes from a fire².”

Gerda is highlighting the dangers of smoke and what to look out for with live demonstrations on stand A390 at scheduled times throughout the exhibition.

What has changed?

The living environment of flats is quite different to that of the 1950s/1960s even up to relatively recently the 1990s. Lifestyles were simpler, furniture and contents were fewer and materials less complex. Today a person’s flat or apartment is likely to have a high proportion of possessions and furniture which are polymer-based or made from fire retardant materials. Additionally construction materials have become more lightweight, easier to produce, improve insulation and offer perceived cheaper cost alternatives to the more traditional building materials such as timber steel and stone.

Why should this matter?

Fires in dwellings then produced carbonaceous smoke, which is quite different to the toxic smoke that is produced today. With the increase in polymer and fire retardant usage in construction products, scientific work is taking place internationally to look at human behaviour in toxic and smoke-filled conditions; the acute toxicity of combustion products (e.g. asphyxiants); the chronic effects (e.g. carcinogens) to name but a few areas. It is a complex field, which is dependent on the fire conditions; materials present and oxygen levels. The types of toxins depend on the materials’ composition as well as the fire conditions. Today, in addition to carbon monoxide gas, ever present in smoke from building fires, other toxic hazards now include hydrogen cyanide, nitric oxide, hydrogen chloride, ammonia, bromine and isocyanates.³

Smoke-related fatalities in England account for over 50% of deaths year on year over the last four years⁴. When Fire & Rescue crews attend fires these days the default is for Breathing Apparatus to be worn – it is only taken off when the officer in charge deems it is safe so to do.

How to minimise the risks?

Passive protection fire safety measures such as fire doorsets are crucial in preventing the spread of smoke. Whilst passive in name, when called upon in fires, they must actively perform. Notwithstanding confidence in the fire safety measure itself (the fire doorset) not rapidly combusting and not having significant material toxic hazards, reassurance on how it performs in holding back toxic smoke is vital.

“It is only when you witness a smoke-filled area and the ensuing disorientation, you realise the crucial role the fire doorset has to play. Vividly demonstrated by Gerda” Ian Moore, CEO, Fire Industry Association.

Find out key points you need to be aware of on stand A390.

¹ Oxford dictionary

² Collins dictionary

³ UCLan Fire Toxicity Conference 2016

⁴ Detailed analysis of fires attended by Fire & Rescue Services England April 2016 to March 2017 Fire 0504. Issued October 2017. This does not include information from the tragic event of Grenfell fire. This figure relates to both persons overcome by gas/smoke as well as persons with burns & overcome by gas/smoke.



Gerda Security Products have been producing fire and security doorsets for 25 years. Gerda specialise in innovative product developments, including fire doorsets, to provide customers in the social housing sector with solutions to challenging environments. Gerda highlighted the importance of smoke control in design as far back as the late '90s and the smoke pod demonstrations are a tool to demonstrate this. An animated film clip was produced in 2010 focusing on product choices for fire safety and smoke control. In 2005, the Premises Information Box™(PIB)®System was developed with the fire engineering department of the London Fire Brigade to provide premises plans and information to attending fire crews. This system operates nationwide. 2017 saw Gerda shortlisted in the Passive Fire Safety Awards for its maintenance technology for fire doorsets which gives end users traceability on the 'DNA' of every fire doorset. Access control protection is the latest development with both the Fire & Rescue Service and Secured by Design in providing a solution to meet ADB and ADQ in housing.

Passionate about safety in the built environment, Gerda are members of the, Fire Industry Association, Fire Protection Association and Door & Hardware Federation as well as founder members of Secured by Design. Gerda sit on working groups and liaise closely with third party UKAS accredited test houses, including Exova BM Trada, Cambridge Fire and BSI as well as notified certification bodies. We work with Fire & Rescue Services nationwide.

www.gerdasecurity.co.uk

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Visit stand A390 to view live smoke demonstrations

Timetable	Tuesday 19 th June	Wednesday 20 th June	Thursday 21 st June
Smoke demonstration time	11.00 hrs	11.30 hrs	10.30 hrs
Smoke demonstration time	12.00 hrs	12.30 hrs	11.30 hrs
Smoke demonstration time	13.00 hrs	13.30 hrs	12.30 hrs
Smoke demonstration time	14.00 hrs	14.30 hrs	13.30 hrs
Smoke demonstration time	15.00 hrs	15.30 hrs	14.30 hrs