

ENGINEERING
TOMORROW

Danfoss

Hotels

Optimum fire safety in hotels with **SEM-SAFE**[®] high-pressure water mist system

Danfoss Fire Safety A/S

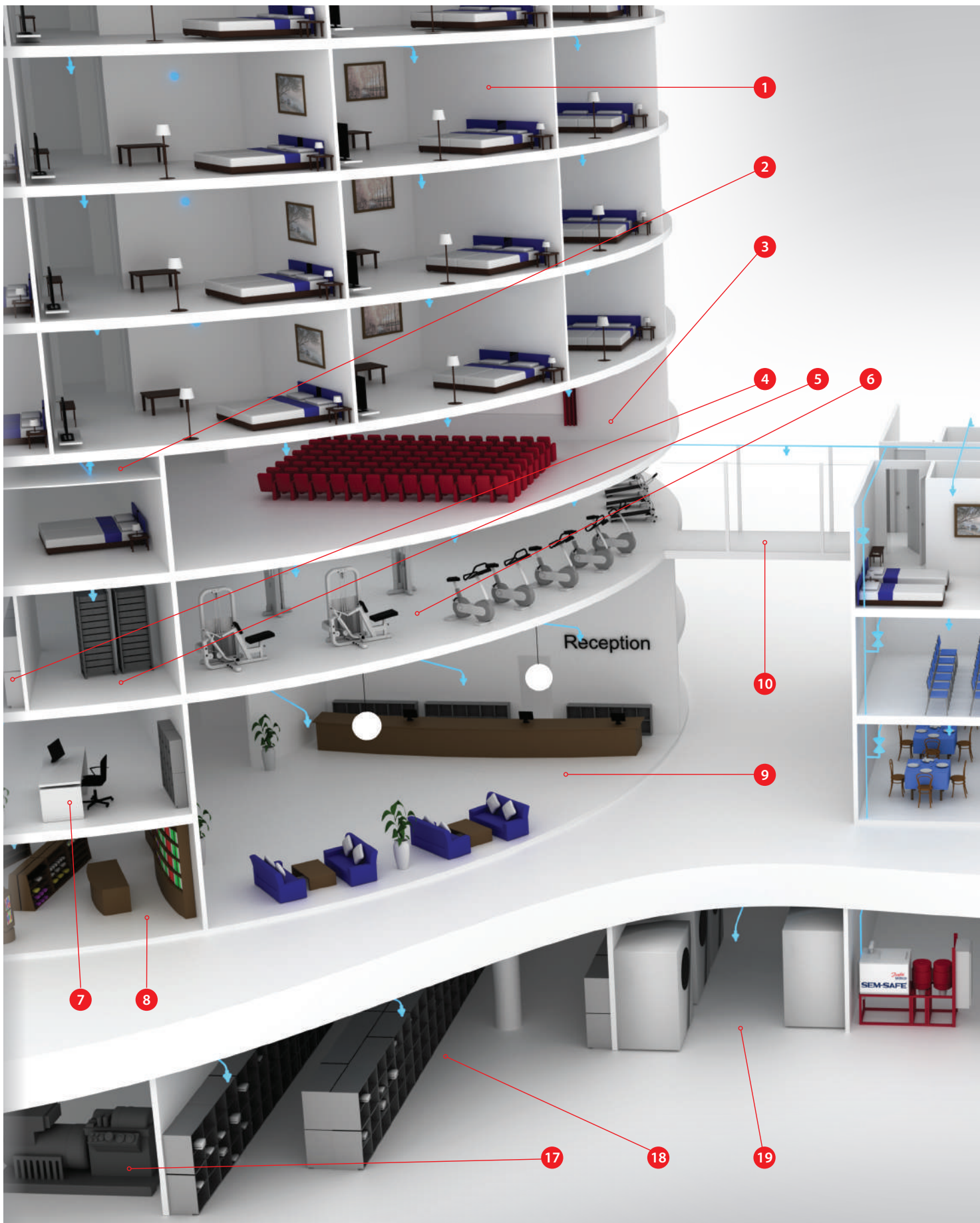
Aesthetic
design with
SEM-SAFE[®]
for fire
fighting

www.semsafe.danfoss.com

SEM-SAFE[®]

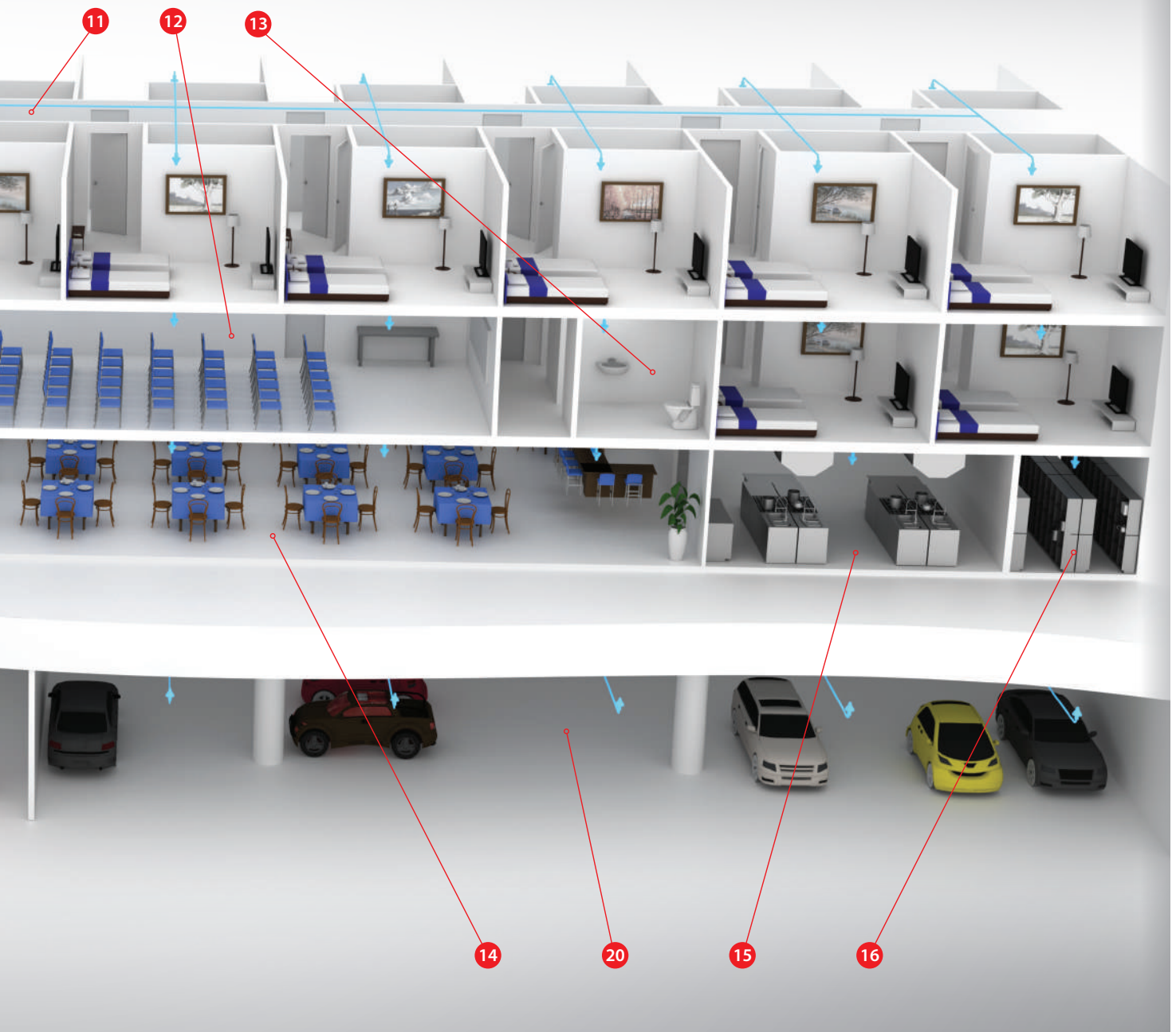
SEM-SAFE® high-pressure water mist system

One single system to protect all areas in the hotel



Danfoss provides fire fighting solutions for areas such as

- 1 Hotel rooms
- 2 Suspended ceilings
- 3 Theatres
- 4 Archives
- 5 Server rooms
- 6 Fitness rooms
- 7 Offices
- 8 Shops /boutiques
- 9 Reception
- 10 Glass corridors
- 11 Corridors
- 12 Conference rooms
- 13 Bathrooms
- 14 RESTAURANTS / BARS
- 15 Kitchens
- 16 Technical rooms
- 17 Generator rooms
- 18 Storage areas
- 19 Laundry rooms
- 20 Car parks





SEM-SAFE® for hotels

Need a fire fighting system that:

- Is harmless to people and environmentally friendly?
- Allows for safe evacuation of guests and staff?
- Reduces business interruption as water damage is minimised?
- Provides freedom in architectural design to match the surroundings?

Then SEM-SAFE® high-pressure water mist is your solution!

Hotels are usually associated with fun thoughts of vacation, family trip or attending a business meeting in a far away place. But hotels themselves are not safe from hazards and dangers of fire. A building owner has to take all measures possible to ensure fire protection for all guests and working personnel, but also measures that will keep to a minimum structural damage caused by a fire.

With SEM-SAFE® high-pressure water mist from Danfoss, the fight against fire is more efficient, with the ultimate goal of saving lives and limiting equipment damage.

Fire protection for hotels

With small pipe dimensions, large coverage, minimal water consumption, a compact skid unit and simple design, SEM-SAFE® high-pressure water mist is the perfect choice to protect hotels against fire, with reliability and cost-saving in mind. The system is safe, efficient and environmentally friendly.

Architectural design

The aesthetic design of our pipes and nozzles fits perfectly into a beautiful hotel environment. Due to the small and convenient pipe sizes, the system is easily installed, even retrofitted. The compact system also leaves more space for money generating activities.

Safe evacuation

- The priority in case of a fire is the safe evacuation of guests. The superior properties of water mist make this fire fighting technology the best choice for protecting a hotel
- The system is only activated in areas where fire is detected. Other areas in the hotel will not be affected

Minimised business interruptions

- Using high pressure water mist keeps secondary damage to a minimum due to the low water consumption
- Water coming from the pipes is clean water as SEM-SAFE® uses stainless steel pipes that are corrosion resistant. In case of system release, the clean-up is easier, faster and incurs lower costs

Fast installation

- Easy to install in modern hotels, where the SEM-SAFE® installation will not disrupt any of the desired architectural features
- Easy to retrofit in existing hotels where the system will blend in well with the surroundings. The small pipe sizes and large spacing make it simple and easy to install
- Perfect solution for old buildings, where valuable historical preservation is important

Benefits of SEM-SAFE® high-pressure water mist system

Tackles fire swiftly and efficiently

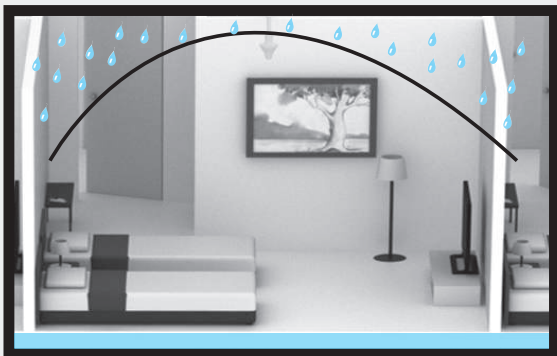
- Radial heat is blocked efficiently. This helps in protecting against any structural damage by not allowing the flames to expand
- Gentle to electrical equipment due to small water droplets. Therefore, the functionality of the electrical equipment in the hotel is not disrupted and data is saved

Cost saving solution

- The small water droplets evaporate immediately during discharge. The result is minimal water damage to surrounding equipment, reducing operational downtime to a minimum
- With fewer nozzles required thanks to optimized spacing and the need for only one pump unit for all applications, installation cost and time, as well as required service interventions, are considerably reduced
- Our high-pressure pumps are water-lubricated and hence virtually maintenance-free
- With 30% fewer components compared to other competing systems, the SEM-SAFE® system is lighter and more compact. This allows for easier installation, simplified maintenance and valuable space saving
- Cost of water supply is significantly reduced due to less piping, reduced water demand from the water supply, lower taxes and no or significantly smaller water reservoirs
- No need for other technologies. SEM-SAFE® is the perfect solution for fire protection of more sensitive areas such as server rooms and archives



SEM-SAFE®



Traditional sprinkler



SEM-SAFE® uses up to 50% less water when compared to low-pressure water mist systems and up to 80% less water when compared to traditional sprinklers.

Proven experience across the world

For more than 15 years, Danfoss has been installing fire fighting systems in both new and retrofit hotels all over the world. The experience we build with each installation and project allows us to provide our customers with the best and most reliable fire fighting solution on the market.

The excellent fire suppression properties, and the system's advantages that allow for sustainability and reliable fire protection of buildings, people and the environment has made SEM-SAFE® the right choice for hotels, such as:

- CitizenM, Holland
- Hotel Gutshof Liepen, Germany
- CitizenM, England
- Scheelehof, Germany

In-house design

We have the necessary experience and technological know-how to provide you with the optimal fire fighting system based on fire risk analysis for your hotel.

Tested and approved

The design of the SEM-SAFE® high-pressure water mist system is based on full scale fire tests. For industrial and commercial applications, approvals are obtained through testing in accordance with specifications from, for example, FM, UL and ISO, as well as from the European guideline CEN/TS 14972 and approvals from DBI and VdS.



Internal HSE&Q system in accordance with:

- DS/EN ISO 9001:2015
- DS/EN ISO 14001:2015
- DS/OHSAS 18001:2008



DS/EN ISO 9001:2015

DS/EN ISO 14001:2015

DS/OHSAS 18001:2008

The intelligent use of water

How does it work

For a fire to survive, it relies on the presence of the three elements of the 'fire triangle': oxygen, heat and combustible material. The removal of any one of these elements will extinguish a fire.

The **SEM-SAFE®** high-pressure water mist system goes further. It attacks two elements of the fire triangle: oxygen and heat. The uniqueness of high-pressure water mist is that it combines the suppression effect of gas and sprinkler systems. As well as removing the oxygen like a gas system it simultaneously cools the fire like a traditional sprinkler. The cooling effect additionally lowers the risk of re-ignition.



A unique fire fighting system

The **SEM-SAFE®** high-pressure water mist system is a unique fire fighting system. When water is forced through nozzles, at high-pressure, a super-fine mist is formed that has a two-fold extinguishing effect. As well as cooling the fire like a traditional sprinkler, it simultaneously starves the fire of oxygen like gas systems. When the mist comes into contact with flames, it evaporates and expands minimum 1,700 times. The dense vapour created displaces the flames and quickly extinguishes the fire.

Decades of pioneering and engineering

As one of the acknowledged pioneers of high-pressure water mist technology, Danfoss operates in-house research, development and manufacturing facilities of all critical components: nozzles, pumps and valves.

This puts us in a unique position to maintain our technological leadership in the future. All our products are made of first-class materials and in a comprehensively tested design.



Nozzle

Danfoss high-pressure water mist nozzles

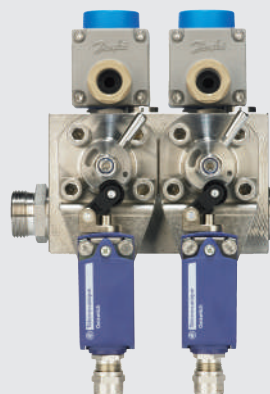
- Highest market spacing (5.5m)
- 100% capacity and spray pattern tested
- Aesthetic nozzle design



Pump

Danfoss high-pressure pumps

- Lubricated by water, making the pump maintenance free
- World's lightest and most compact
- 95% energy efficient and very low pulsation to reduce noise



Valve

Danfoss stainless steel valves

- Compact easy installation and operation
- Dirt resistant
- High-corrosion proof

Total Solution Provider of Certified Fixed Fire Fighting Systems

Danfoss Fire Safety A/S, an integral member of the Danfoss Group, is a global leader in the sale, development, production and service/commissioning of certified fixed fire fighting systems under the brand name SEM-SAFE®.

We offer you unparalleled competitive edge through quality and reliable products, uncompromising performance and cost-effective fire fighting systems.

Innovation is our approach

We have been engineering and pioneering SEM-SAFE® fire fighting systems for decades. This gives us the experience and technological knowledge to provide a complete range of SEM-SAFE® fire fighting systems based on two key technologies: high-pressure water mist and low-pressure CO₂.

Engineering a safer tomorrow

From a modern high-rise building to a state-of-the-art university, from a wood church to a super hospital and busy international airport, SEM-SAFE® high-pressure water mist is the optimum fire fighting solution for any building type. The breakthrough that high-pressure water mist represents is to use the same method as traditional sprinklers, but to add the effect of converting the water into steam.

This means that the cooling effect is up to seven times higher than for traditional sprinklers. Combined with the oxygen displacement effect, this can reduce water consumption significantly compared to traditional sprinkler.

Besides a proven track record in buildings, we install SEM-SAFE® fire fighting systems in a wide range of vessels. Safety on board ships is critical, and this places great demands on fire fighting systems. No matter if the journey means transporting goods across oceans on a mega container ship, or a vacation trip to a beautiful island on a luxurious cruise, SEM-SAFE® fire fighting is the perfect choice to protect the vessel and passengers against fire, with reliability and cost-effectiveness in mind. For the demanding marine segment we offer

two fire fighting technologies: SEM-SAFE® high-pressure water mist and SEM-SAFE® low-pressure CO₂.

Reaching even higher

Simplicity in design, obtained by using the most advanced technologies, results in the highest operation reliability. All our products are made of first-class materials and in a comprehensively tested design.

Danfoss is close by

Danfoss and its associates, regional offices and agents constitute a worldwide network that provides comprehensive technical support, installation, commissioning and repair services.

This network ensures that our reputation for fire fighting excellence is maintained and enhanced.

**>50
years**

of pioneering
research & testing
in fire fighting

SEM-SAFE®

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