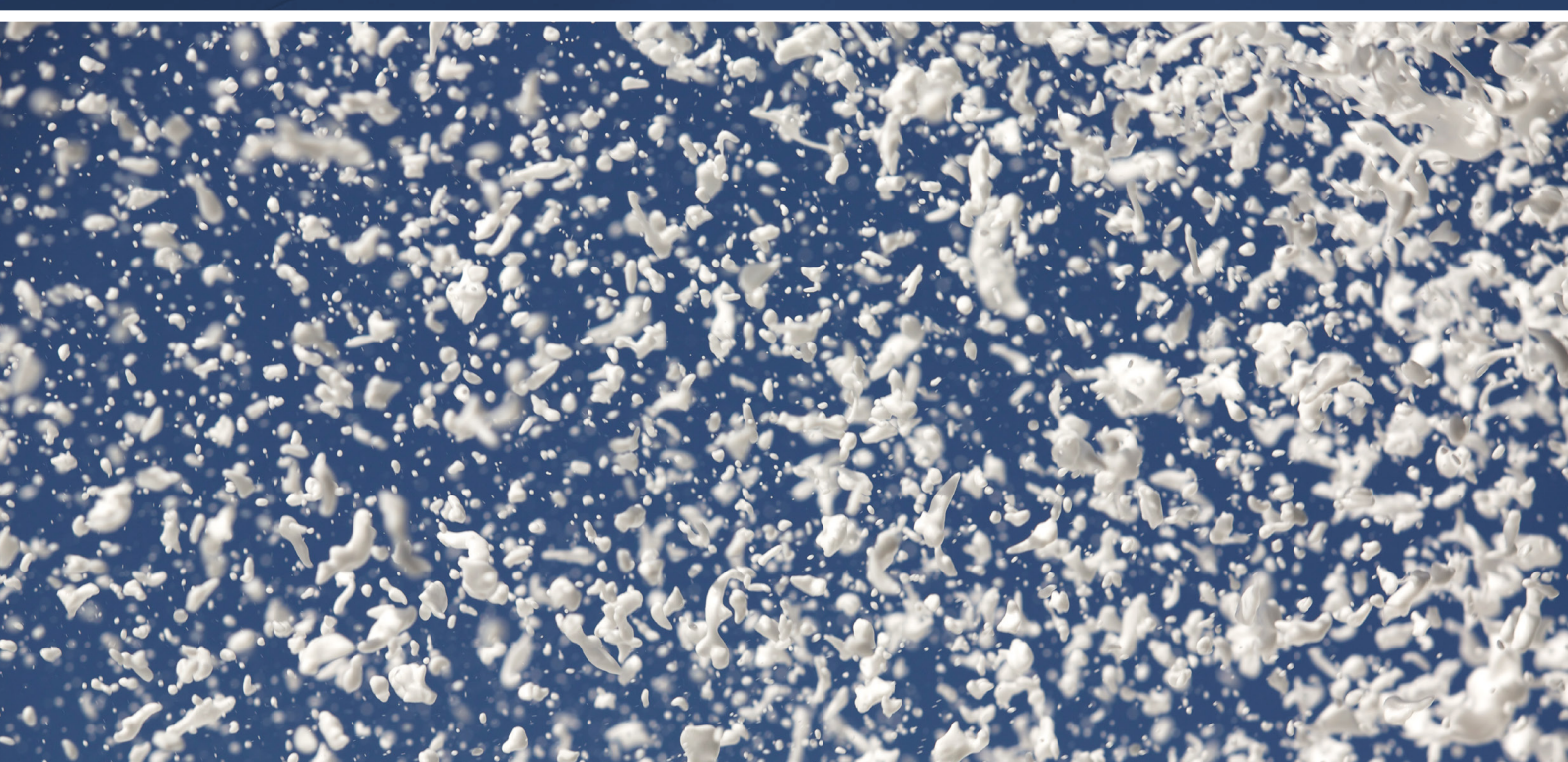




THE MOST EFFICIENT FIXED FIRE FIGHTING
SYSTEM IN THE 21ST CENTURY.

A close-up, high-angle shot of a fire fighting component, likely a nozzle or valve, with a blue-tinted background. The metal parts are dark and show signs of wear and threading.

**FAST. EFFECTIVE. SAFE.
ENVIRONMENTALLY FRIENDLY**



THE ONE SEVEN GROUP IS THE WORLDWIDE MARKET LEADER IN THE FIELD OF STATIONARY COMPRESSED AIR FOAM (CAF) SYSTEMS. IT IS BASED IN BERLIN, GERMANY AND OPERATES SUBSIDIARIES IN THE NETHERLANDS, USA AND UAE.

The development of the One Seven technology started in the middle of the 90's with mobile systems, with fixed installations available since 2002.

One Seven is heavily engaged in researching and developing this relatively young technology, and holds several international patents.

We partner with our customers and support them from the initial planning phase up to the final installation.

We offer a portfolio of services related to:

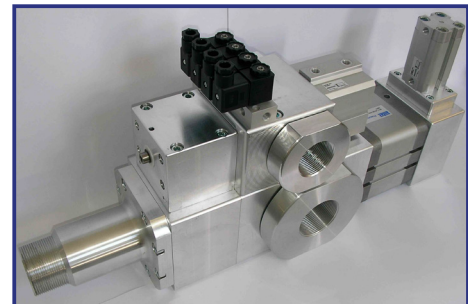
- Basic and detailed design
- Manufacturing of key components, such as foam generators, control units, nozzles and foam concentrates
- Installation including piping and cabling
- Aftersales support

Due to its superior fire fighting efficiency and its universal applicability, One Seven has been sold to over 1,500 fire departments worldwide. In addition, numerous fixed installations have been implemented - mostly in industrial applications.

One Seven has been selected for the protection of high-risk assets such as highway tunnels in Germany - which are open to all traffic including hazardous material transports - as well as nuclear facilities in France.

Compressed Air Foam (CAF) technology was recognized by NFPA in 2006 and is now part of the NFPA 11 standard, where it forms a separate category besides the conventional low, medium and high expansion foams.

One Seven holds a number of international certifications, including FM Global Approval in the US.



ONE SEVEN® COMPACT FOAM GENERATOR



ONE SEVEN® ROTOR



ONE SEVEN® MAIN COMPONENTS



ONE SEVEN FOAM



WELCOME TO THE WORLD'S MOST EFFICIENT FIRE FIGHTING SYSTEM, PROVEN TO EFFECTIVELY COMBAT DANGEROUS FIRES EVEN IN DIFFICULT LOCATIONS, SUCH AS HIGH-RISE BUILDINGS OR TUNNELS.



The One Seven foam is a highly advanced extinguishing agent. The One Seven foam generator transforms each drop of water into 7 foam bubbles by adding the unique One Seven foam concentrate along with compressed air.

The superior efficiency of One Seven results from the properties of the foam bubbles. The foam sticks to all surfaces in the fire scene with multiple effects:

- The foam blanket covers the surface of the solid or liquid fuel, stopping the release of flammable gases.
- It allows a prolonged cooling period in which the foam vaporizes on the fuel, rapidly cooling it to below its flash point.

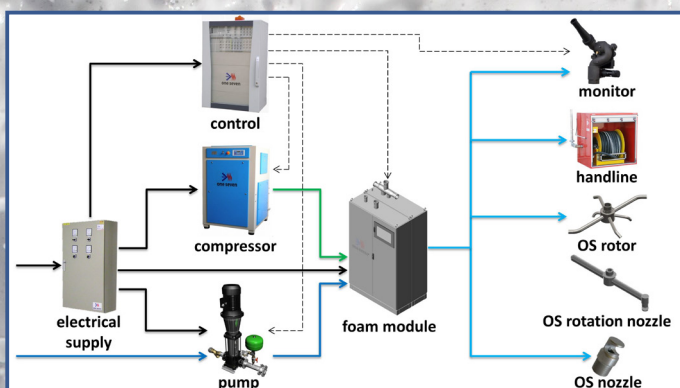
- The water-foam solution drains out of the foam bubbles to penetrate any solid fuel efficiently.
- By covering nearby surfaces, One Seven shields surrounding structures from the fire's heat radiation, preventing their ignition.

The unique properties of the One Seven foam result in a 90% utilization of the water discharged on the fire scene, compared to a mere 5-10% with conventional fire fighting methods.

The foam's effectiveness results in rapid fire knockdown and drastically lowered property damage, while the reduced water usage prevents water damage and facilitates clean up.

We offer complete solutions based around the One Seven foam-extinguishing agent for maximum speed, effectiveness, safety and environmental sustainability.

One Seven exceeds civil defence requirements for residential, commercial and industrial application.



ONE SEVEN FOR REAL ESTATE

In the region's cosmopolitan cities, dense tower blocks and urban spaces create a unique environment with its own fire risks.

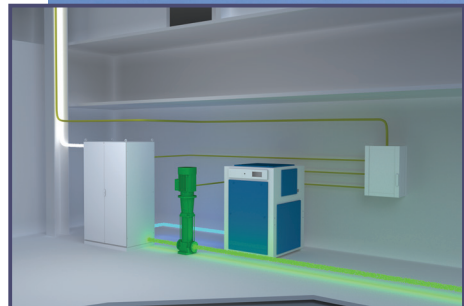
Recent fire breakouts have shown that high rise towers carry a fire risk that is difficult to control with conventional technologies. For developers and landlords, a fire presents not just loss of reputation but of business and also a potential loss of life.

One Seven's integral fire fighting solutions protect human life and real estate assets. The unique properties of the One Seven extinguishing agent allow its use in **high-rise buildings of up to 400m** - by simply installing foam generation equipment in the basement. Booster pumps aren't required, which simplifies the network, reduces the number of parts and minimizes the risk of system failure.

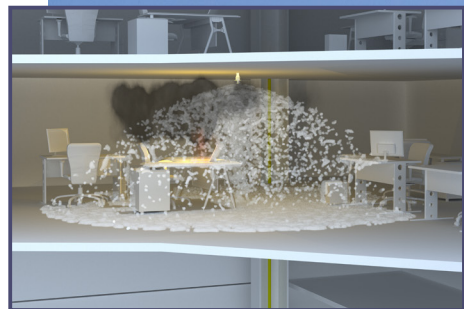
ONE SEVEN® PRE-ACTION
SPRINKLER SYSTEM



DETECTION THROUGH BURST OF
SPRINKLER HEAD



ACTIVATION OF ONE SEVEN SYSTEM
IN BASEMENT



FIRE SUPPRESSION BY FOAM
DISCHARGE



Automated systems can apply One Seven foam through sprinkler heads, rotary nozzles and wall hydrants. One Seven systems can be retrofitted into existing buildings, creating a comprehensive fire protection solution.

Easy to install, operate and maintain, One Seven is an insurance against extensive fire damage. It promises peace of mind, protection of assets and sanctity of life.

ADVANTAGES

- **HIGHEST RELIABILITY THROUGH INSTALLATIONS IN THE BUILDINGS BASEMENT, NO BOOSTERS NEEDED**
- **DRY PIPING NETWORK, NO CORROSION, NO WATER DAMAGE THROUGH LEAKAGE**
- **NO EXCESSIVE WATER DAMAGE.**

ONE SEVEN FOR SENSITIVE APPLICATIONS

One Seven's ability to effectively fight fires without water damage makes it ideal for historically important sites that need to be preserved in their original condition for instance mosques, museums, libraries and archives.

It is also ideally suited for environments with valuable and sensitive assets, such as TV studios, control rooms or showrooms.

The One Seven foam knocks down fires rapidly while also facilitating effective clean up post blaze.

ONE SEVEN® SYSTEM IN
A TELEVISION STUDIO
BERLIN, GERMANY

ONE SEVEN'S ADVANTAGES IN SENSITIVE APPLICATIONS INCLUDE:

- **LOW APPLICATION RATES RESULT IN LESS WATER CONSUMPTION, IN TURN CAUSING LOW WATER DAMAGE.**
- **FOAM COATS SURROUNDING SURFACES NEAR A FIRE, SHIELDING AGAINST HEAT AND SOOT, THUS LIMITING PROPERTY DAMAGE.**
- **DELUGE OR PRE-ACTION SYSTEMS WORK THROUGH DRY PIPES THAT DON'T SUFFER CORROSION AND LEAKAGE.**
- **POST-FIRE CLEAN UP IS EASY AND EFFECTIVE.**

ONE SEVEN FOR ROAD TUNNELS

THE 1999 MONT BLANC TUNNEL FIRE RESULTED IN THE LOSS OF 39 LIVES, REPAIR COSTS OF EUR 450 MILLION AND MACRO ECONOMIC COSTS OF UP TO EUR 500 MILLION. TUNNEL FIRES HAVE PROVEN TO BE VERY DANGEROUS TO BOTH HUMAN LIFE AND STRUCTURAL INTEGRITY. TUNNEL FIRES CAN DEVELOP EXTREMELY RAPIDLY, AND REACH VERY HIGH TEMPERATURE DUE TO THE ENCLOSURE.

EU research programmes such as FIT (Fire in Tunnels) and Solit (Safety of Life in Tunnels) have confirmed that fire development to over 150 MW is likely even for normal HGV's or coaches in less than 5 min.

As a result, One Seven has become the German government's supplier of choice for highway tunnel systems that have been tested against full-scale Class A and Class B fires of up to 160 MW heat release rate.

Suitable fire suppression systems have to be capable of extinguishing fires of such intensities.



THE ADVANTAGES OF ONE SEVEN TUNNEL SYSTEMS INCLUDE:

- **PROVEN EFFICIENCY FOR SUPPRESSION OF VERY LARGE FIRES (160 MW REAL HEAT RELEASE RATE).**
- **SIMPLE INSTALLATION DUE TO LOW NUMBER OF ROTARY NOZZLES.**
- **HIGHEST RELIABILITY DUE TO AUTOMATIC REMOTE SYSTEM CHECKS WITHOUT DISTURBING TRAFFIC.**
- **NO CORROSION OR LEAKAGE, DUE TO DELUGE SYSTEM DESIGN.**
- **SIMPLE AND COST EFFICIENT MAINTENANCE.**

ONE SEVEN FOR THE PETROCHEMICAL INDUSTRY

ADVANTAGES OF ONE SEVEN IN PETROCHEMICAL APPLICATIONS INCLUDE:

- **OPTIMISED PROTECTION OF STRATEGIC ASSETS.**
- **MAXIMUM USAGE OF LIMITED RESOURCES.**
- **INSPECTION AND TESTING OF SYSTEMS WITHOUT INTERRUPTION OF THE FACILITIES WORK FLOW.**
- **LOW PROPORTIONING RATES, LEADING TO LOW FOAM CONCENTRATE CONSUMPTION, RESULTING IN REDUCED LOGISTICS.**
- **STREAMLINED INSTALLATIONS.**
- **LOW MAINTENANCE COSTS.**



One Seven systems can be used in all stages of the petrochemical process - from drilling and production, crude oil storage and refining up to the transportation and storage of the finished products. One Seven offers efficiency and reliability that conventional systems can't match.

This increased efficiency is reflected in the NFPA 11 standard, which allows drastically reduced application rates (of only 1.63 litre per minute/ square metre) compared to conventional foam systems.

The reduced application rate result in 4 times less water consumption in combination with the low proportioning rate of only 0.5 per cent of the unique One Seven AFFF foam the concentrate consumption is reduced by up to 40 times.

ONE SEVEN FOR WASTE MANAGEMENT FACILITIES

THE IMPORTANCE OF WASTE MANAGEMENT HAS GROWN TREMENDOUSLY IN RECENT YEARS, WITH OPERATIONS EVOLVING FROM HANDLING SIMPLE GARBAGE TO PROCESSING SECONDARY RAW MATERIALS AND FUEL FOR ENERGY PRODUCTION. THE NUMBER OF RECYCLING FACILITIES AND WASTE-TO-ENERGY PLANTS HAS GROWN RAPIDLY WORLDWIDE.

Simultaneously, a large number of fire incidents have shown the incapability of existing fire suppression technologies in dealing with the demands of such facilities.

One Seven has been successfully installed in a number of plastic, paper, tire recycling plants as well as in waste-to-energy and surrogate fuel facilities.

The adhesive properties of One Seven foam allow it to cover the fuel, thereby ensuring fire suppression and preventing the un-burnt fuel from ignition.

One Seven offers a number of advantages over conventional solutions for waste management applications:

- In the likely event of fires One Seven knocks it down rapidly thus limiting the impact on the business.
- Simple maintenance with lower down time.
- One Seven works efficiently on mixed fuels.



MISCELLANEOUS INDUSTRIAL APPLICATIONS

ONE SEVEN'S FIRE SUPPRESSANT PROPERTIES, LOW APPLICATION RATES, ABILITY TO STICK TO FUEL SOURCES AND HIGH EFFICIENCY MAKE IT A FAR SUPERIOR ALTERNATIVE TO CONVENTIONAL SYSTEMS IN INDUSTRIAL USE.



COMPACT ONE SEVEN® SYSTEM

One Seven systems have been successfully installed and used in cable ducts, hydraulic installations such as in steel or aluminium mills, coal fired power plants (coal conveyor and mill), hydro electric power plants, transformers, paint shops, oil or paint storage rooms, nuclear power plants, windmills, warehouses and special storages such as tire and thermo plastic stocks.

In combination with the alcohol resistant One Seven foam concentrates the system can be used on polar solvent fires as well.

One Seven can also be used solid or liquid metal fires. (Aluminium, Magnesium, Zirconia and Tungsten.

ELEVATED HELIPADS

ICAO Regulations require helipads to be equipped with foam fire fighting equipment. The One Seven-heliport system provides both remote controlled monitors as well as hose lines.

One Seven systems are set apart from competitors by the quality of the

extinguishing foam, and the large throwing distances achievable. The system automatically restricts foam volumes on the hose line, allowing safe operation even by non-professionals.

COMPACT SYSTEMS

One Seven offers a range of self-contained compact systems for limited areas and short time of application. These systems offer simple installation and do not require compressors but feed from compressed gas cylinders, which makes them ideal for environments where external power supplies are either unavailable or unreliable

One Seven's stored energy systems are configured for the immediate protection of property and machinery, allowing an- instant response to fire.

One Seven also offers integrated foam-producing wall hydrant systems that can easily be installed on existing water supply networks in industrial enterprises, warehouses, gasoline stations or underground parking.



ONE SEVEN® HELI PAD INSTALLATION

ONE SEVEN REFERENCES

ONE SEVEN® STATIONARY SYSTEM INSTALLED IN CONTAINER
OUTSIDE OF A FACILITY



ZIRCONIAM INDUSTRY FACILITY, FRANCE

WASTE TO ENERGY PLANT, GERMANY



SEO VIANDEN HYDRO
POWER PLANT, LUXEMBOURG



ARCELOR-MITTAL STEEL WORKS, THURINGA GERMANY



CABLE DUCT RAILROAD STATION
POTSDAMER PLATZ, BERLIN



RECYCLING PLANT, GERMANY