



**TK SIAPS - MANHOLE-SEWAGE INFRASTRUCTURE
ANTI-EXPLOSION PREVENTION SYSTEM**

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National Fire Protection Association
The authority on fire, electrical, and building safety



An aerial photograph of a city grid, showing a dense network of streets and buildings. A river flows through the city, and a highway is visible on the right side. The text is overlaid on the left side of the image.

TKSIAPS

MANHOLE-SEWAGE INFRASTRUCTURES

ANTI-EXPLOSIVE PREVENTION SYSTEM

TK-SIAPS

MANHOLE-SEWAGE INFRASTRUCTURES
ANTI-EXPLOSIVE PREVENTION SYSTEMS

As there are millions of explosions every year within our Cities and Towns, the Techno Kontrol's Research & Development team has designed a new patented product in which via utilizing our new safety technology our TK-SIAPS can prevent any gas explosion from occurring within our cities and towns sewage communication infrastructure. These explosions normally are initiated by the concentration of gas, heat, fuel-gas leaks and / or waste which is contained inside the cities/towns sewage communications infrastructure.

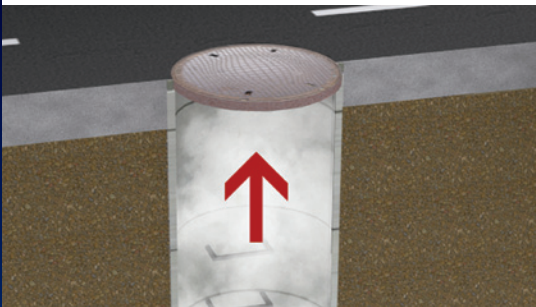
Concentration of gas inside the sewage infrastructure

Due to a combination of the areas listed below (i.e. Age, Heat, Waste etc) many of today's cities and

towns sewage communication infrastructures can be found to be in extremely bad condition which means that they are more susceptible to exploding (in the majority of cases these explosions contain gas). An example of such an explosion can be recently found in Brazil with several deaths and many injured over the last few months, however, at least one such explosion can be found nearly every few weeks inside the United States which needlessly to say on a yearly basis these explosions are claiming the lives of innocent bystanders and tourists.

Areas which cause our Sewage Communication Systems to become a hazardous danger to our health and assets are:

- Lack of Maintenance
- Age (wear and tear), non upgraded renovation programs
- Heat, humidity, dampness,
- Waste (Chemicals & Gases), salt, cleaning chemicals, others
- Natural or accidental damages from previous explosions
- Earthquakes & earth movements due to flooding or similar
- Using jointly different utilities in one same conduct
- Terrorism & sabotage, acts of social unrest



Concentration of gas inside sewage communications infrastructure

We believe that until the local authorities of our towns and cities upgrade their underground maintenance programs so as to incorporate preventative solutions which are available today, the problems that are occurring within our underground infrastructures of our towns and cities (i.e. manhole explosions) will continue to increase year on year with devastating consequences to both the local inhabitants and its local authorities.

This belief is due to the fact that more explosions are occurring every year and as the local inhabitants of the respective towns or cities are gaining more injuries, more and more law suits are being presented to the local authorities for legal, punitive and negligent damages for not applying solutions such as our TK-SIAPS system which could have prevented these explosions from occurring in the first place.



WHY ARE SO MANY MANHOLE-SEWAGE INFRASTRUCTURE GAS EXPLOSIONS OCCURRING IN THE FIRST PLACE?

Explosions within the above infrastructures are typically caused when a spark from a wire ignites against the gases located inside our underground systems, thus causing a fire which in turn spreads and builds up into an explosion of the respective manhole.

Many people do not understand that a cast-iron manhole cover can weigh between 85 and 300 pounds (35 to 136 kg), and previous explosions have propelled these massive discs anywhere from 1 foot to 50 feet (0.3 to 18 m) up into the air.

Hence as per above with more and more explosions occurring within our underground systems every year, the local authorities are facing a real problem as with these explosions comes the respective industrial claims for loss of power, damages and social claims for injuries to inhabitants which at their most serious level can include the loss of life.

IN MOST CASES HOWEVER THESE EXPLOSIONS ARE CAUSED BY THE FOLLOWING:

- Underground cables becoming frayed with old age
- Corrosive chemicals
- Electrical overload
- Rats biting the respective wires (these cables can carry up to 13,000 volts of electricity)
- Contact of waste materials inside the sewage systems creating a spark against the respective gases
- An accidental or intentional ignition via somebody throwing a match from a vehicle onto a manhole
- A road traffic accident
- A passing vehicle causing a spark over a manhole
- Natural causes such as lighting of static charges

Any one of the above can cause an ignition point which can either internally or externally ignite one or more of the gases contained within our underground systems and thus create an explosion.

The point of the above is that every one of our underground systems contains numerous different gases in which without the correct preventative materials being used can explode at any given time both via natural and unnatural causes.

Thus the real problem is that gases will always exist within our underground systems and depending on the age, general condition and the other additional uses of our underground systems (i.e. electricity lines) the risk of an explosion just continues to increase.

Many of the worlds sewage systems are over 100 years old and the investment to repair or to renew these infrastructures would run into the hundreds of millions as not only would the local authorities have to replace the



physical infrastructure, they would also have to pay for loss of business due to diverting traffic or shutting off electrical supply for long periods of time which in turn would affect the local inhabitants as they would not have any telecom services or electricity again for long periods of time.

Due to the amount of explosions already this year, some utility service corporations are also beginning to install manhole systems which contain a larger/more physical aperture on the respective manhole so as to create what they believe to be a better ventilation system for the gases to reach the exterior.

However our scientists believe that in some cases the above may help in stopping explosions, but in others it will hinder or even increase the initial problem of causing a manhole explosion as it will produce a chimney effect which as we all know will end up with a fire being created.



In conjunction with the chimney effect this fire will increase and become more virulent thus expanding the fire to other sectors creating a chain reaction.

So in résumé, although the larger more physical aperture manholes will protect some cases from exploding, our scientists believe that it will be an unstable system and when a fire does occur, the damages will be multiplied due to the new chimney effect thus resulting in more damages than that of the respective service corporation's present system.

Manhole smoke

Hence it is understandable that local authorities do not want to look into this reoccurring problem. However with more and more accidents occurring worldwide each year from manhole explosions producing more injuries or loss of life the local authorities will sooner rather than later start to feel more media/political and legal pressure to look into solutions for this problem and when they do, systems like our TK-SIAPS will start to look more attractive and less expensive than the hundreds of millions it will cost the local authorities in legal, punitive and criminal damages for not using a viable system so as to prevent these explosions.

In reality the only real and effective manhole system which can prevent both fires and explosions from occurring is that of our TK-SIAPS system. This is due to the fact that our system is the only system available today in which no gas ignition can occur both internally or externally and as our TK-SIAPS system is protected by an anti-fire/heat base system we can ensure our clients that no explosion or fire will reach the exterior thus providing the fire services with enough time to reach and resolve the respective incident.

To conclude, we are sure that you will agree with us that changing a manhole cover is far easier, quicker, more cost effective than changing a hole underground infrastructure system and that if a local authority knows about a system that exists to prevent a manhole explosion and does not implement it, they are legally liable for any damages caused by such an explosion.

THEREFORE WE ARE HAPPY TO STATE AND DEMONSTRATE WHERE NECESSARY THAT THIS SAFETY TECHNOLOGY EXISTS TODAY AND ITS NAME IS TK-SIAPS.

WHAT IS TK-SIAPS



TK-SIAPS preventing ignition by third party forces

Our protective patented system is called TK-SIAPS and it is easily attached to the base of any existing maintenance hole cover (manhole). TK-SIAPS will ensure the prevention of any gases or fumes being ignited by any third party forces whether they are accidental or intentional from the exterior.

Accidental or intentional forces such as a match, lantern, a static discharge such as that of a spark from a passing vehicle, can all be found to be a source for the ignition of re-occurring explosions which take place in our cities and towns

every year, however some of these explosions can also be found to be from terrorist attacks as cities or towns sewage communications infrastructure are an easy target for such an attack and with very low means an attack can do extreme damage.

As we state within our “mission statement” each and every one of us have a social responsibility (in the case of governments they have a legal responsibility) to look after today’s world for tomorrow’s generation and that means that if an alternative solution already exists to stop these explosions from taking place, then it is up to us to utilize it.



The TK-SIAPS System is easily mounted and dismantled which means that it can be easily dismantled and re-used in another location depending on the urgency or risk of a possible explosion taking place.

It also incorporates a unique anti-theft security system which will make it difficult for any unauthorized personnel to remove. However we can ensure the user that this security system does not affect the manner in which authorized personnel such as emergency services or official operators can enter and exit the sewage communications network.”

BENEFITS OF TK-SIAPS

- It is a unique system which enables both governments and town halls to avoid the possibility of explosions taking place within their sewage communications infrastructure.
- Studies show that it is both cost effective and easy to incorporate into existing cleaning maintenance programs
- The TK-SIAPS System will enable any government or town halls sewage communications network to slowly, safely and naturally discharge their sewage gases with total security that no explosion will take place as they can no longer be ignited from the exterior
- It is 100% transferable and reusable
- It is easy to clean and maintain
- It is 100% eco-friendly and 100% recyclable
- It is easy to adapt/modify so as to attach onto any existing maintenance hole cover (if required)
- It contains a unique anti theft system which does not interfere with the entrance or exit of authorized personnel

H2O & EN124 TRAFFIC RATED NFPA, CE, ISO 9000, ISO 14000, ISO 18000

The TK-SIAPS Manhole Safety System is traffic rated to handle any common traffic load or condition. Our TK-SIAPS Manhole Safety System exceeds the H-20 and AASHTO HS-25 load rating along with the European EN-124 load rating and we are sure that it can deliver a better performance than your old cast iron cover.

The TK-SIAPS Safety System is manufactured under NFPA (National Fire Protection Association in which Techno Kontrol is a member) guidelines. TK-SIAPS also manufactured under the ISO9000 - ISO14000-ISO18000 and CE-European Union quality and safety requirements.



National Fire Protection Association
The authority on fire, electrical, and building safety

US NFPA-69-2008-Standards on Explosion preventing Systems



ISO 9000-ISO14000-ISO18000



CE Certified Manufacturer (2012)



INSTALLATION OF TK-SIAPS

As with any business, if a particular section of a business is closed for any length of time, it can become extremely costly. For both governments and town halls if an explosion takes place they will have to deal with two costs, the first and more important cost is that of the loss of life or social costs and the later costs are those of an indirect nature such as closing down local streets, dispatching local or national emergency services, rebuilding etc. However, as TK-SIAPS takes away the threat of any explosion, all the above costs are automatically eliminated.

As Techno Kontrol is a pragmatic corporation we understand the financial restraints of the world's economy and therefore we suggest that the local governments and town halls install the TK-SIAPS System within areas which have either direct or indirect access to gas works, refineries, sewage plants, old or low maintained industrial sites and any old communication networks etc.





Once these areas have been modernized or upgraded then the TK-SIAPS System can be re-used, re-sold or relocated to again protect a probable conflictive or dangerous area.

Although we strongly recommend using our own maintenance hole covers which are specifically made for the TK-SIAPS Systems we can if required modify TK-SIAPS so that it can be mounted onto any of the government's already existing maintenance hole covers.

These alterations can be achieved both swiftly and easily by a reputable operator and again these maintenance hole covers can be re-used with or without the TK-SIAPS System later in the future.

The TK-SIAPS System will enable any government or town halls sewage communications network to slowly and safely discharge their gases with total security that no explosion will take place.

MAINTENANCE

TK-SIAPS System is made by means of a new VI generation alloy mesh which is both easy



to clean and to maintain however most importantly our mesh is 100% eco-friendly and 100% recyclable.

Studies show that our TK-SIAPS system is both a cost effective and efficient system and therefore any government or town hall can easily incorporate it into their local cleaning maintenance program.

Because our TK-SIAPS comes with a low level maintenance system it can be lifted, cleaned (by hand or by compressed air) and replaced within 5 minutes.

Let us help you get started. We will be happy to assist you in determining what is the correct size required in order to upgrade your system. We can also assist in supplying you with custom sizes to suit your needs.

Our TK-SIAPS Safety Systems is an essential part of any safety and security plan for any major town, cities, industrial corporations and especially with high density areas.

VARIOUS SIZE/COLOR OPTIONS

Let us help you get started. We will be happy to assist you in determining what is the correct size required in order to upgrade your system. We can also assist in supplying you with custom sizes to suit your needs.

Our TK-SIAPS Safety Systems is an essential part of any safety and security plan for any major town, cities, industrial corporations and especially with high density areas.

ADDITIONAL BENEFITS

1 PREVENTS UNAUTHORIZED ACCESS

Because a registered key is required to remove the TK-SIAPS Manhole Safety System, you can now allow access to your secure maintenance hole covers to authorized personnel only from the interior or exterior. This will protect your communication vaults, fiber optic cables, distribution valves, grease traps, sewer systems, storm drains and virtually any underground infrastructure and maintenance hole covers for which security is a major concern. Easily secure your maintenance hole covers and TK-SIAPS Safety Systems from terrorists, thieves, saboteurs, vandals with one product- the TK-SIAPS Manhole Safety System.



2 NO SCRAP VALUE

The TK-SIAPS Manhole Safety System will prevent the theft of the TK-SIAPS Safety System including the maintenance hole covers by thieves wishing to sell covers and the TK-System as scrap metal. Maintenance hole cover theft is a frequent, profitable and common headache in which all governments and town halls have to deal with on a daily basis.



ADITIONAL BENEFITS

3 LIGHTWEIGHT, EASY TO HANDLE AND TRANSPORT

You can easily lift the TK-SIAPS Safety System with the maintenance hole cover unlocking system with just one hand. Not only does the TK-SIAPS Safety System provide security for your maintenance hole covers or infrastructure but it also provides tremendous ergonomic benefits.

Lifting and removing a cast iron cover is an awkward, hazardous, operation that causes millions of euro's every year in lost work hours and injury claims.

Our system also respects the European Union Health & Safety Directives of loading weight



for personnel. The TK-SIAPS Safety System weighs less than 8 kg without the maintenance hole cover which can be also be made of fiber glass or re-used cast iron if required by the client under any recycling program or project.

4 NO EXPENSIVE LIFTING EQUIPMENT NEEDED

Because of the lightweight material used and the TK-SIAPS Safety System eliminates the need for expensive, cumbersome lifting equipment as can be found when using old cast iron covers. Please note that the TK-SIAPS Safety System does not exceed 8kgs without the maintenance hole cover for standard sizes.



ADITIONAL BENEFITS

5 REQUIRES REGISTERED SECURITY ANTI-THEFT T-KEY TO UNLOCK

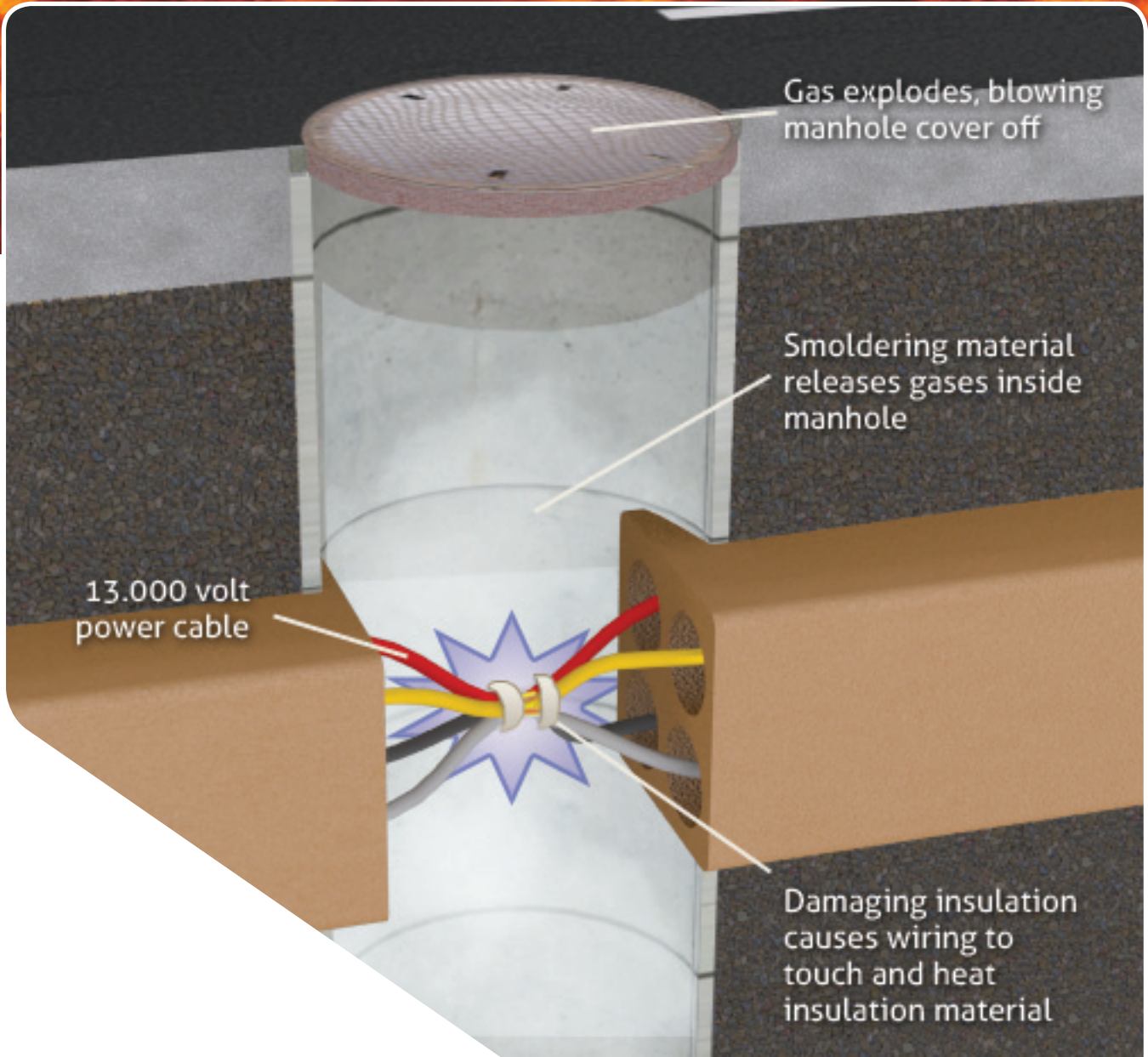
Using the TK-SIAPS Anti-theft Tool with our registered key, you can install or remove the TK-SIAPS Safety System and maintenance hole cover security system into your existing maintenance hole cover ring within seconds without ever having to bend over, strain or get on your hands and knees. Just unlocking the system and with an easy lift action the protection system is lifted out for cleaning or maintenance.



6 CLEANING AND MAINTENANCE

Low level cleaning and maintenance required and can be incorporated into any normal maintenance program. In less than 5 minutes the TK-SIAPS Safety System can be turned around and cleaned by hand or by compressed air.







WHY, WHEN AND WHERE DO MANHOLE EXPLOSIONS OCCUR?

The underground infrastructures of our cities and towns will continue to increase with this problem with devastating consequences for the inhabitants and financially for the authorities as law suits are being presented for legal, punitive and negligence damages for not applying solutions to these grave preventative accidents due to many factors from low maintenance programs, out dated and of other service applications without installing preventive solutions as the TK-SIAPS system.

WHY SO MANY MANHOLE-SEWAGE INFRASTRUCTURE GAS EXPLOSIONS?

A cast-iron manhole cover can weigh between 85 and 300 pounds (35 to 136 kg), and explosions have propelled these massive discs anywhere from 1 foot to 50 feet (0.3 to 18 m) into the air. The real problem with these explosions are the loss of power, chain reactions in other sectors, damages, injuries to inhabitants including the loss of life, possible use for terrorists and easily sabotaged as just some of the problems.



IN MOST CASES, THESE ARE THE EVENTS THAT LEAD TO AN EXPLOSION:

Underground cables become frayed from aging, corrosive chemicals, overload or rats biting them. These cables carry on the order of 13,000 volts of electricity. Other reasons are the simple contact of waste materials inside the sewage systems creating a spark or even the accidental or intentional ignition by humans from throwing a match to an vehicle road traffic accident to a passing vehicle spark or even natural causes as lightning or static charges.

- These ignitions points can internally or externally ignite the gases and create an explosion.
- The underground infrastructure systems or sewage system is loaded with explosive and lethal gases.
- The pressure from these explosive gases builds up inside the manhole and through the sewage system.
- The gases are then ignited causing a powerful explosion.

Depending on the amount of gas-pressure built up inside the manhole, the cover may flip over or be launched several feet in the air, causing as in Brail many physical injuries including deaths of tourists without taking into account the loss of assets and the psychological damage of not knowing where or when this may occur again.

The real problem is that gases will always exist and depending on the age, general condition and the other additional uses of the manholes systems (as overloading of other services, gas lines, electricity...) the risk continues to increase. Many of these sewage systems are over 100 years old and the investment to repair and to renew these infrastructures can run into the hundreds of millions not only due the physical infrastructure changes but to the loss of business, commercial and road traffic and worst to relocate and to reconnect all the utility services to that area causing thousands of families to have telecom services, loss of all types of power and energy cuts until these infrastructures are re-built or repaired.

These needed maintenance and overhaul projects must be dealt with urgency at least in the worst areas or city sectors with but being these extremely costly and of great disruption they are put aside as long as possible. However, with more and more accidents occurring worldwide causing injuries, deaths and loss of the trust of the inhabitants and voters including the increasing media, political and legal pressure for not seeking solutions will sooner or later outweigh the cost of installing our safety system TK-SIAPS due to using our safety system being less expensive than paying hundreds of million of dollars for legal, punitive and criminal damages for the responsible authorities due to not using a viable system which becomes negligent and cannot be based on ignorance as this safety technology exists and is present by means of using our TK-SIAPS.



CERTIFICATES & ASSOCIATIONS

The background is a monochromatic blue with a complex, layered texture. A large gear with a rope-like outer edge is the central focus, set against a background of wavy, concentric lines that resemble a topographical map or a stylized sunburst. The overall aesthetic is industrial and technical.



National Fire Protection Association
The authority on fire, electrical, and building safety

Additional Certificates Due in 2016-17

Certificados adicionales en 2016-17

Certificats supplémentaires en 2016-17



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WHERE YOUR SAFETY IS OUR PRIORITY

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