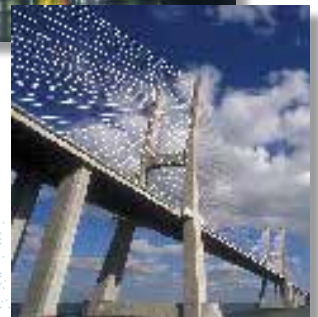
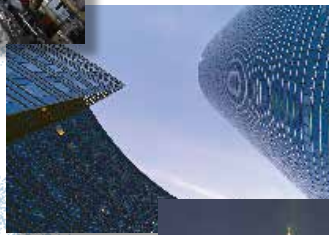


sectyelectronics®

For private  
business and industry

# secty lifePatron®

Advanced earthquake warning and security system



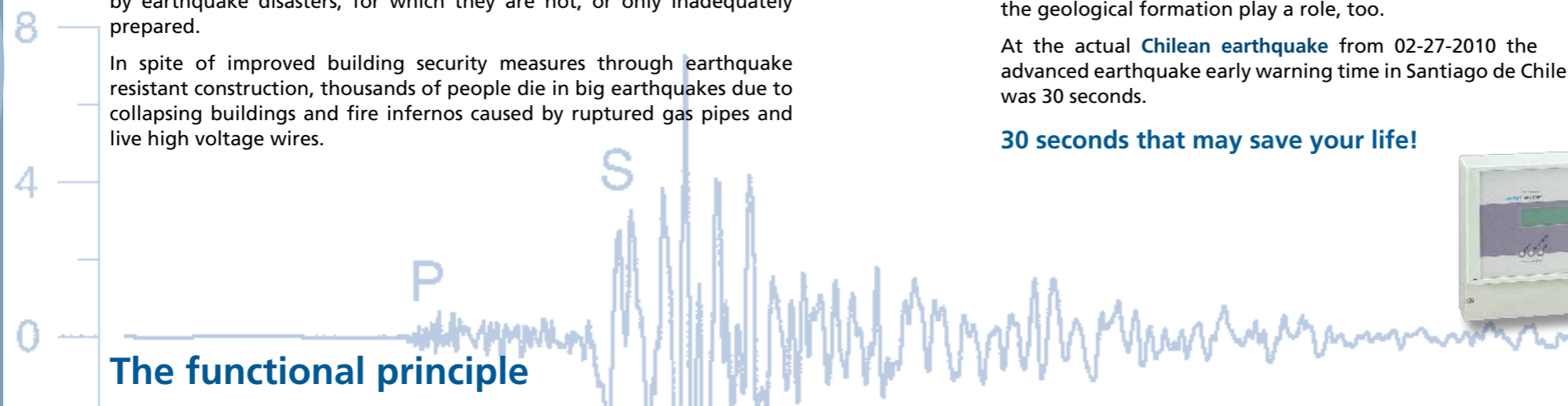
# secty lifePatron®

## Advanced earthquake warning

### An estimated seven million people lost their lives in earthquakes in the last 500 years

Seismologists record about 20,000 tremors annually. Experts completely agree: millions of people in large metropolitan areas of earthquake-endangered regions of the earth will in the near future be threatened by earthquake disasters, for which they are not, or only inadequately prepared.

In spite of improved building security measures through earthquake resistant construction, thousands of people die in big earthquakes due to collapsing buildings and fire infernos caused by ruptured gas pipes and live high voltage wires.



### The functional principle

The functional principle of **secty lifePatron®** is based on the fact that every earthquake announces itself: "I am on the way".

Earthquakes are temporary vibrations of the soil, spreading from their point of origin in different waves into all directions.

Seismic waves are distinguished between primary waves and secondary waves.

The primary wave of an earthquake is innocuous, imperceptible to the population and spreads from the point of origin – epicenter – of the earthquake faster than the destructive secondary wave.

Consequently, the primary wave always reaches the location of the system first. The secondary wave follows after a time delay. The farther the location of the system from the epicenter of an earthquake, the longer the time period between the arrival of the primary wave and the secondary wave. The period between the arrival of the primary and the secondary wave is the time available for an advance warning of the population and the environment.

Physical connections exist between the primary wave and the secondary wave of an earthquake. The characteristics of the particular primary wave permits estimates as to the force of the following secondary wave and consequently to its expected destructive effects.

**secty lifePatron®** is able to detect and analyze the primary and secondary waves of an earthquake.

If a selected threshold level is reached during the detection and analysis by **secty lifePatron®**, the advance earthquake warning system triggers an optical and acoustic alarm. The threshold level is selected so that the alarm is activated only in case of earthquakes with a destructive effect of the secondary wave for the population and environment.

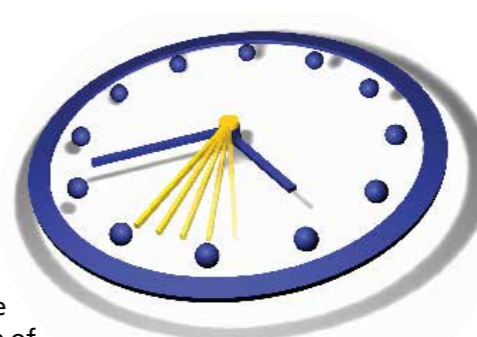
## and security system

### Every second counts

The period between the alarm and the actually perceptible, destructive earthquake usually is no more than a **few seconds**. This depends on the distance between the location of **secty lifePatron®** and the epicenter of the earthquake. The depth of origin of the tremor and the state of the geological formation play a role, too.

At the actual **Chilean earthquake** from 02-27-2010 the advanced earthquake early warning time in Santiago de Chile was 30 seconds.

**30 seconds that may save your life!**



**secty lifePatron®** is designed for



- > single family homes
- > row houses

- > apartment buildings
- > multi-story buildings
- > hotels
- > administration buildings
- > hospitals
- > industrial facilities
- > industry
- > infrastructure
- > public warning



gas solenoid valve

Did you know that some animals behave unusually before an earthquake approaches? No? Fact is, that some animals, for example, geese, react to those harmless primary waves and indicate the impending danger by their behavior.

Scientific expertise - GeoResearch Center (GFZ) Potsdam

**secty lifePatron®** is the result of a close cooperation between science (GFZ) and **secty electronics**.

The functional principle of **secty lifePatron®** has been approved and certified in independent scientific tests conducted by the GeoResearch Center in Potsdam.

### Modern building management with **secty lifePatron®**

Ruptured gas and water pipes, as well as open live high voltage wires represent an additional danger for the population and the environment. Likewise building installations such as elevators represent a danger for the occupant of a building in case of an earthquake. The advance earthquake warning system and security system **secty lifePatron®** also offers a solution for this scenario: in case of an earthquake, a modern energy management system immediately shuts down or controls energy systems and electronic building installations. If necessary, gas, electricity and water supply lines can be shut down immediately, and the system "parks" elevators, and immediately and blocks them against further use.

Today, **secty lifePatron®** is an indispensable part of modern building management in earthquake-endangered regions. In combination with earthquake-resistant construction, **secty lifePatron®** assures a maximum of security for the building and its inhabitants.

Access to the energy management is obtained by entering a security code by authorized persons only.

**secty lifePatron®** equipment is manufactured in accordance with state-of-the-art technologies and strict quality standards. The selection of our suppliers is also governed by this principle of performance and quality for the benefit of our customers.

In this respect, in the area of gas valves, sectyelectronics has selected the high-tech top-quality products and system solutions by a well-known, worldwide German supplier.

Research, development and production  
Made in Germany

## Save costs by joint purchasing!

The possibility of the collective purchase and use of one single system is very attractive, especially for tenants of apartment buildings and multi-story buildings, because the purchase price can be defrayed proportionately to all tenants or owners.



**MASTER**  
earthquake detector



**TABD**  
central serving and control member



**SIR**  
sirene optically/  
acoustically

## Benefit from the customized solutions through consistent and professional planning

Our qualified planning team, our use of the most advanced electronic equipment and the modular design of our systems allow us to be responsive to the special needs of our customers. Tailor-made solutions guarantee an optimal security package and are available at a favorable price-performance ratio.

### Advanced earthquake warning and security system

## secty lifePatron®

The basic version of **secty lifePatron®** consists of the earthquake detector **secty lifePatron® MASTER** as a stand-alone device with an integrated, rechargeable battery for emergency power. Two sirens (105 decibels) warn inhabitants in case of an impending earthquake and it is possible to shut off gas by an electromagnetic gas valve.

Handling of the system is menu-driven through an LCD display (4 x 20 characters), with a console integrated into the front cover of the housing. All pending information and indications are shown in the display.

The system status is indicated visually by LED's for operation, failure and alarm.

### Central Serving and Control Module TABD

There is the option of observing the operation and control functions via **TABD** from a remote location (security center or gate keeper).

### An asset for security!

### Redundant earthquake monitoring by **secty lifePatron® SUBMASTER**

Earthquake monitoring can be performed by the above-described versions. For this purpose, the **MASTER** is connected via data lines to the **SUBMASTER** in a master-submaster arrangement. The **MASTER** scans all **SUBMASTER** cyclically and decides on triggering of an alarm of all earthquake detectors. A maximum of 16 advance earthquake warning systems can be connected. Of course, 2 sirens may be installed on each **SUBMASTER**.

### Power supply unit **secty lifePatron® PS**

**PS** supplies low voltage to the entire system **secty lifePatron®** via a low voltage line. An integrated rechargeable battery emergency power supply secures the operation of the system in case of a power failure. When the **MASTER** detects and reports an impending earthquake, the optical/acoustic alarm is triggered and sounded through the max. 6 sirens connected to the **PS**. It is possible to connect up to 15 **PS** in the system.



### Energy Management System **secty lifePatron® EMS**

When the **MASTER** detects and reports an impending earthquake, an alarm is also triggered to activate the energy management system **EMS**. The energy management system **EMS** then immediately actuates all connected energy systems and electronic building and infrastructure installations.

In this way, for instance, it is possible to

- > shut down gas and electricity supplies
- > shut down the water supply
- > activate emergency power generators
- > actuate elevators
- > open safety doors and gates
- > control signal installations in front of bridges and tunnels
- > control railway signal installations
- > run data back-up programs
- > stopping sensitive production machines

Overall, a **EMS** system is able to control up to a maximum of 8 different electronically operated energy systems and building installations.

### Earthquake detector **secty lifePatron® MASTER**

In case of an alarm, the earthquake detector **MASTER**, decides on triggering of an optical/acoustic alarm of all sirens connected to **PS** as well as on the actuation of electronic energy and building installations connected to **EMS**.

### PRETRIGGER

If the „**PRETRIGGER**“ turns up in the display the system has measured and analyzed seismic vibrations of low intensity or ground vibrations (not on the basis of earthquakes) which are not strong enough to generate an alarm signal, because in normal case there is no potential danger for humans and environment.

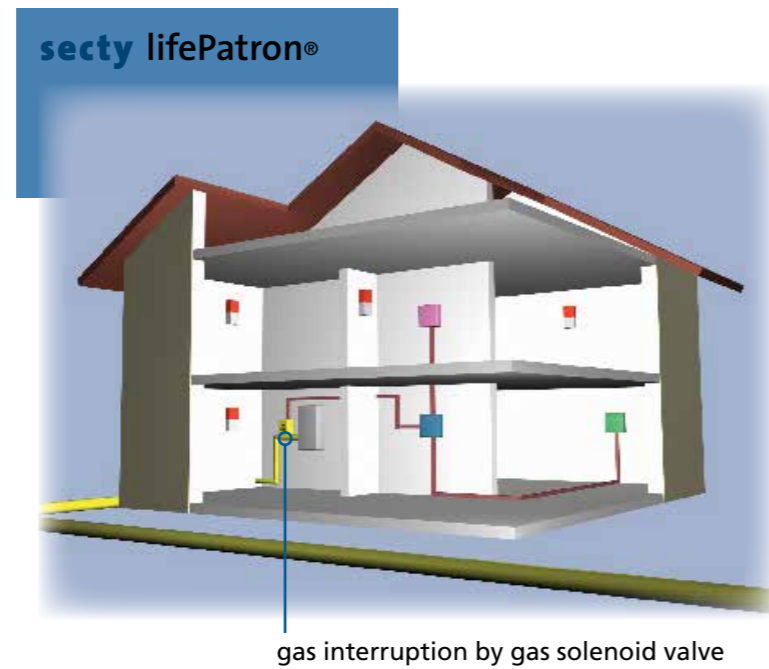
This „**PRETRIGGER**“ is activated only if the threshold is adjusted to >01. If the adjusted threshold is = 01 the system directly generates an alarm signal instead of a „**PRETRIGGER**“.

**MASTER**  
earthquake detector

**SUBMASTER**  
earthquake detector

**PS**  
power supply  
(from left to the right)

## Application example single family homes



### Building Control System

The advanced earthquake early warning system can also be integrated easily into an already existing building control system so that all electronic equipment/ energy supply systems can be switched to safe positions in case of an earthquake.

### Public Warning System

The redundant detector can also be used as city- or village advanced earthquake early warning system. In this case large capacity sirens are used. The numbers of siren horns to be used depend on the size of the area surface to be covered by the advanced earthquake early warning system and of course also on its topography (e.g. mountains and valleys, high- or low density areas etc.).

The sirens can be connected to a network and can be activated wirelessly.



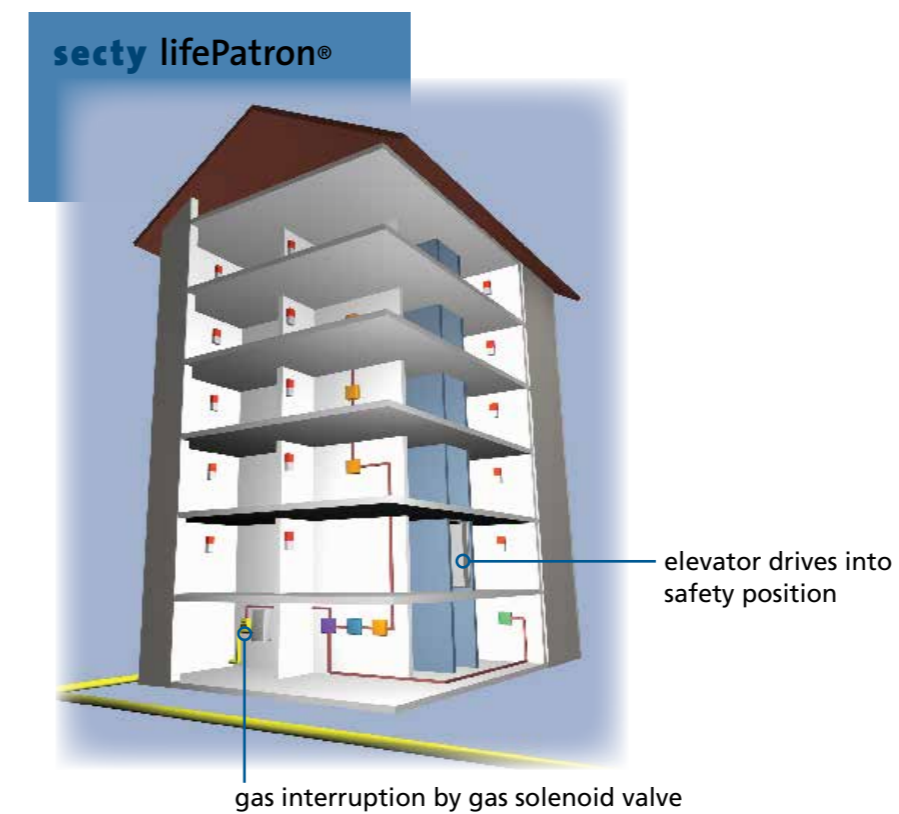
### Industrial Plants

Naturally, in case of an earthquake the alarm signal of the advanced earthquake early warning system can also be used to bring plant and machinery of industrial enterprises in a safe operating status.

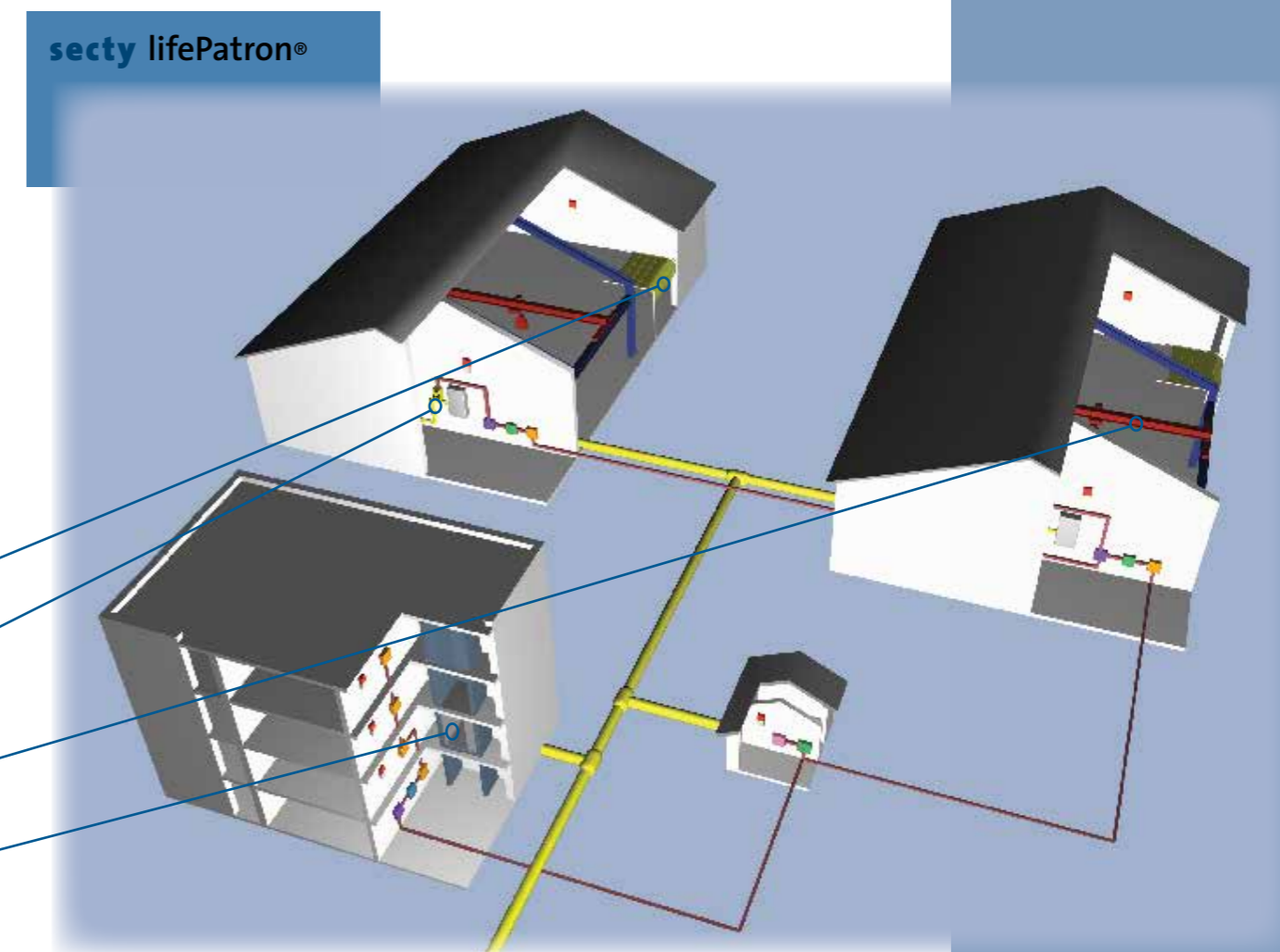
The municipal energy supplier Basel/Switzerland e.g. are using the advanced earthquake early warning system **secty lifePatron®** for automatic gas shut off for the complete city.

- automatic opening of the safety gates
- gas interruption by gas solenoid valve
- crane track drives into safety position
- elevator drives into safety position

## Application example apartment buildings/hotels



## Application example industry



- MASTER earthquake detector
- SUBMASTER earthquake detector
- TABD central serving and control module
- SIR sirene optically/acoustically
- gas solenoid valve

- EMS energy management system
- MASTER earthquake detector master
- PS power supply
- SUBMASTER earthquake detector slave
- TABD central serving and control module
- SIR sirene optically/acoustically
- gas solenoid valve

## Strategy and project planning

### Your partner for installation, commissioning and maintenance

Your factory-authorized system reseller is your partner for installation, commissioning and maintenance. As your qualified system reseller, he is available to answer all your questions concerning planning, technology and costs.

The provided range of services also includes important tips and information:

- > he is your contact person for all questions concerning products
- > he provides you with all information concerning legal regulations and compliance codes.
- > he advises you competently in the selection of adequate system components and accessories
- > he considers your needs and demands in planning of the system technology.

# secty lifePatron®

## Advanced earthquake warning and security system

### Features

- > earliest possible advance earthquake warning through use of state-of-the-art electronic sensors (triaxial) and analytical methods
- > successfully scientifically supported, tested and certified
- > individual system solutions for private and commercial/industrial customers through professional planning, most advanced electronics and modular design
- > objective advance earthquake warning by means of beacons and sirens (105 decibels)
- > automatic security shut-down of all electronic energy systems (gas, electricity, water)
- > intelligent building management of all electronically operated building installations according to client-specific demands/wishes
- > independent accumulator emergency power supply
- > favorable price-performance ratio
- > cost advantages for tenants of apartment buildings through shared use of the system
- > production according to highest quality standards  
DIN EN ISO 9001: 2008
- > encoded system access for authorized persons only
- > elevated security through the possibility of redundant earthquake monitoring
- > communication between all system elements via data bus
- > status LED and display (4x20 characters)
- > 3 case dimensions (HxWxD):
  - 120 x 200 x 57 mm TABD central serving and control member
  - 217 x 250 x 122 mm earthquake detector MASTER/SUBMASTER
  - 281 x 290 x 147 mm and energy management system „EMS“  
power supply up to 6 sirens „PS“



### Award

W.I.N. AWARD 2006 -  
BEST PRODUCT INNOVATION

### Worldwide References

- > City of Basel-Switzerland - shut off the complete gas net
- > Embassies, Consulates, German Buildings
- > BGR - Federal Institute for Geosciences and Natural Resources in Hannover
- > Czech Foreign Ministry
- > GIZ - German Technical Cooperation
- > Caritas, Deutsche Welthungerhilfe, Johanniter, Malteser International
- > PIN - People in Need
- > Bosch, Hilton Hotels, Siemens, T-Systems Innovation Center
- > Germany - QVC, Goodyear, Utility Provider Albstadtwerke GmbH
- > AeroMexiko

The Systems are installed in 19  
different earthquake countries!

### National and International Project Support by Science, Politics and Ad- mission Offices

- > Federal Foreign Ministry Offices - Humanitarian Aid
- > GeoResearch Center Potsdam
- > Institute of Geodynamics National Observatory of Athens
- > Sharif University of Technology, Teheran, Iran
- > Disaster prevention and help organisations
- > TÜV Rheinland Cologne
- > BAM - Federal Office for Material Research and Testing

Your **secty** electronics®- selling partner

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