

# QuartzITE

**IT-Data Center with tested  
availability**

**Room.sys**

**Outdoor.sys**

**MDC.sys**

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**RZ-Products**

# Functional security

## IT Security – a Fundamental Management Task

Modern and successful companies stand or fall with the availability of their IT. The communication with clients, partners and suppliers takes place to a large extent through IT-supported media. However, even business transactions and also internal transactions, particularly processes in the fields of merchandise management, production and logistics all revolve around the pivotal issue of „information technology“. Consequently, at any particular time there is a direct link between functional security of the IT, efficiency and existential security of the company. The theme IT security is therefore, whether we like it or not, one of the top agendas for every management.

Therefore, IT managers have to not only avoid risks, but also procure preventative security measures. This is the only path to avoid legal consequences resulting from personal error when things get serious. How important the protection of IT infrastructures and thereby the liability of those responsible is, can be last but not least recognised that more and more countries hereby introduce mandatory legal provisions.

### Functional IT Security Affects All Business Sectors



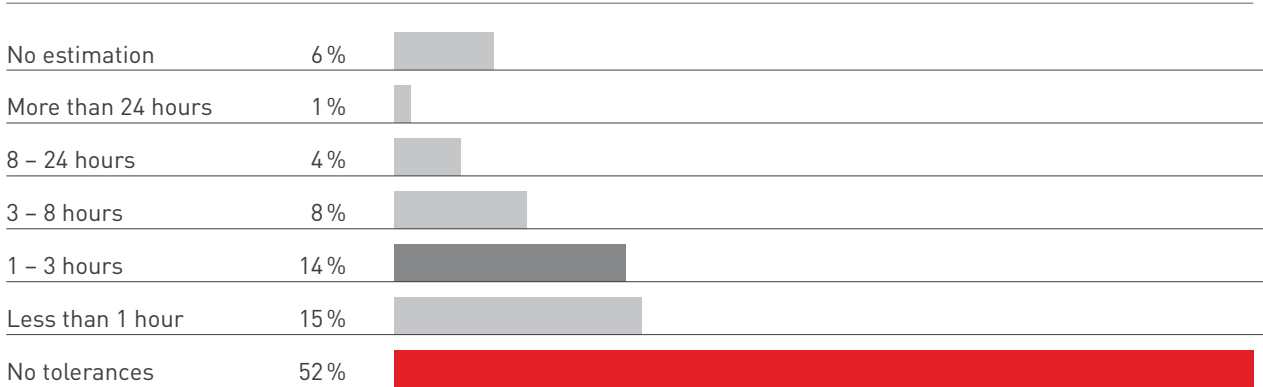
# Functional Security

## IT Security – Prerequisite for Sustainable Business Success

Especially in times of Big Data and Cloud applications, the importance of secure data storage is more important than ever. With continually increasing implementation of IT-based business processes, a downtime in IT for companies means the loss of the ability to react.

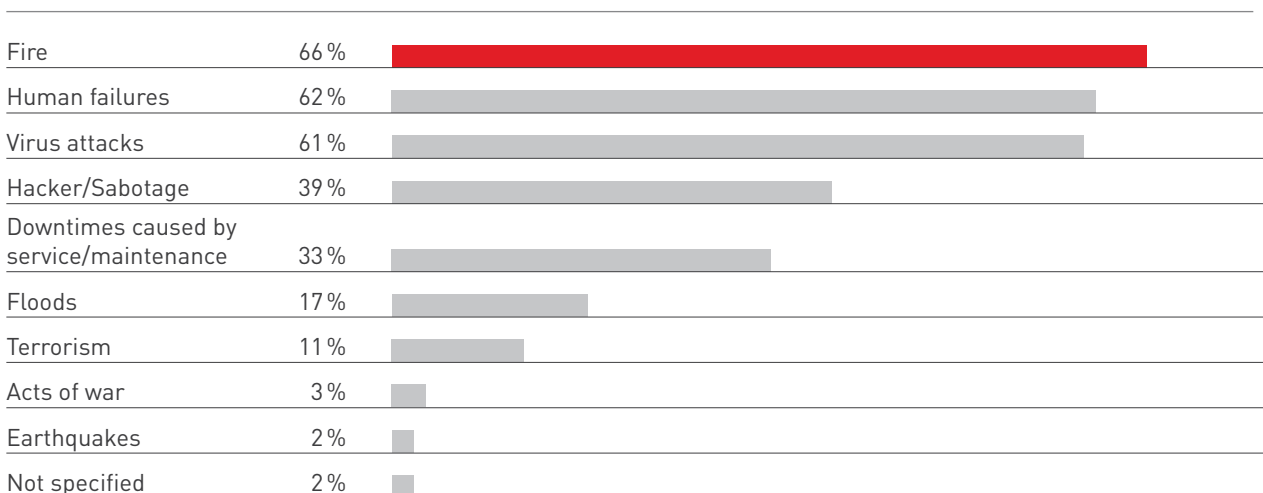
To survive and be successful in the market, the reduction of IT risks and the longest possible warranty for functioning communication processes is the highest premise. The consequences of downtimes in IT infrastructure are often not only financial losses, but also damage to reputation, not to mention unhappy clients and that means a high potential for endangering the existence of the company.

### Acceptable Downtimes for IT Managers



A professionally planned IT infrastructure requires a high degree of functional security. Demand for IT security presents an existential theme for modern companies, because the availability expected amounts to more than 80% of users on 365 days in the year as well as 24 hours a day – and RZ-Products satisfy these demands!

### Reasons for IT Losses



# Functional Security

## Avoiding Failures – Ensuring IT Availability

Constant assurance of functional security is the basis for highest available IT infrastructures and economic success. Downtime-free IT operation rests on the principle of IT-orientated room protection, coordinated with a redundant and efficient supply technology – as a whole concept – tested according to the latest European standards.

### These EN standards orientate around:

#### Definition of dependability

The degree of dependability from functional IT processes defines the availability objectives of each company. The demanded availability is then to be guaranteed through systematic structuring of the IT infrastructures.

#### Risk potential

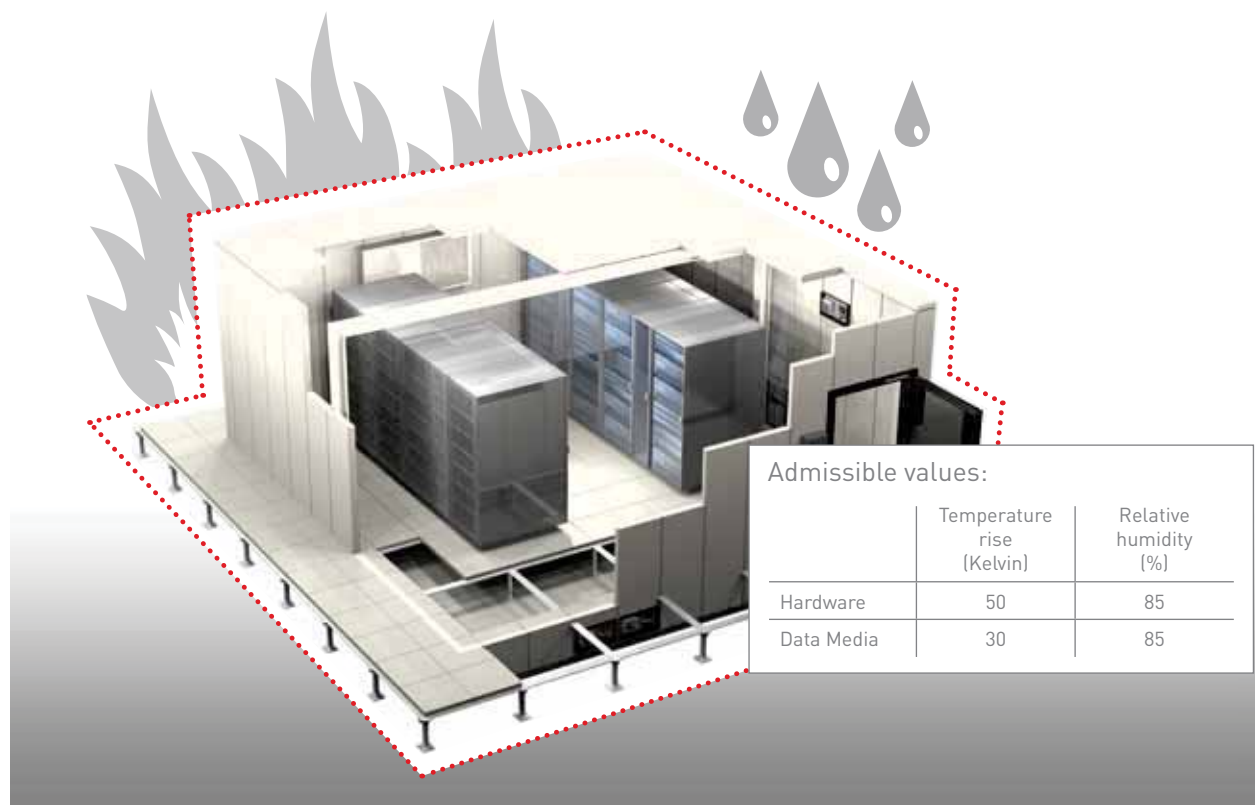
Risks such as fire, water, corrosive exhaust gases, sabotage, vandalism or dust have to be eliminated as best as possible.

#### Admissible values

The level of resistance of individual IT infrastructure concepts is especially important when considering the effects of fires and moisture. The higher the resistance, the more secure the IT.

#### Maximum risk prevention

When all worst case scenarios are professionally avoided, damage to hardware is reduced, the chances of a breakdown are minimised and thereby the best possible measures for avoiding failures are established.



# The QuartzITe Product Line

Secure Constructional Solutions for IT Infrastructures



## QuartzITe-Room.sys

System-tested „room-in-room“ solutions offering fast, simple and modular integration into existing building structures.












## QuartzITe-Outdoor.sys

Professional solutions outside existing building structures; self-sustaining external data center with unlimited expandability by adding various modules in a row.

## QuartzITe-MDC.sys

The flexible data center with lowest surface requirements offers a complete system of infrastructure and protection combined with best use of available floor space. Expandable by coupling various MDCs. Installation is possible with IT-systems in operation.

High protection against:

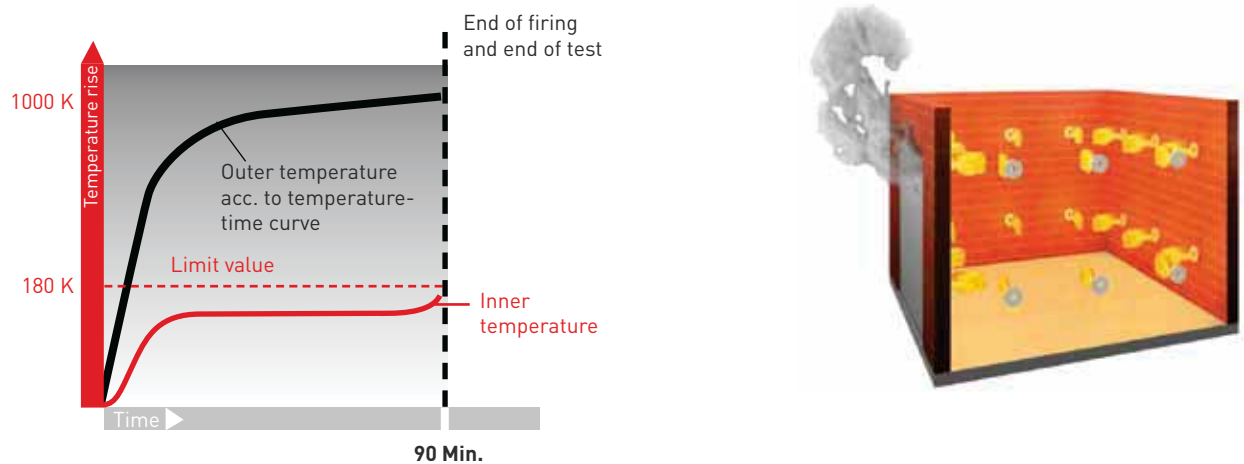
Fire	Fire-fighting water	Explosions	Corrosive gasses	Vandalism	Unauthorized access	Electromagnetic interference	Dust	Debris loads	Theft/Burglary	Noises
										

# System Tests for Highest Security

## Comparison Building Component vs. System Test

Building component tests are sufficient for basic building structures but not for IT installation surfaces. IT surfaces require system-tested constructional infrastructures. The QuartzITe product line is tested acc. to relevant construction standards of DIN (German Standards Institute) and EN (European Standard) thus guaranteeing the compliance with limited values acc. to EN 1047-2 for physical security.

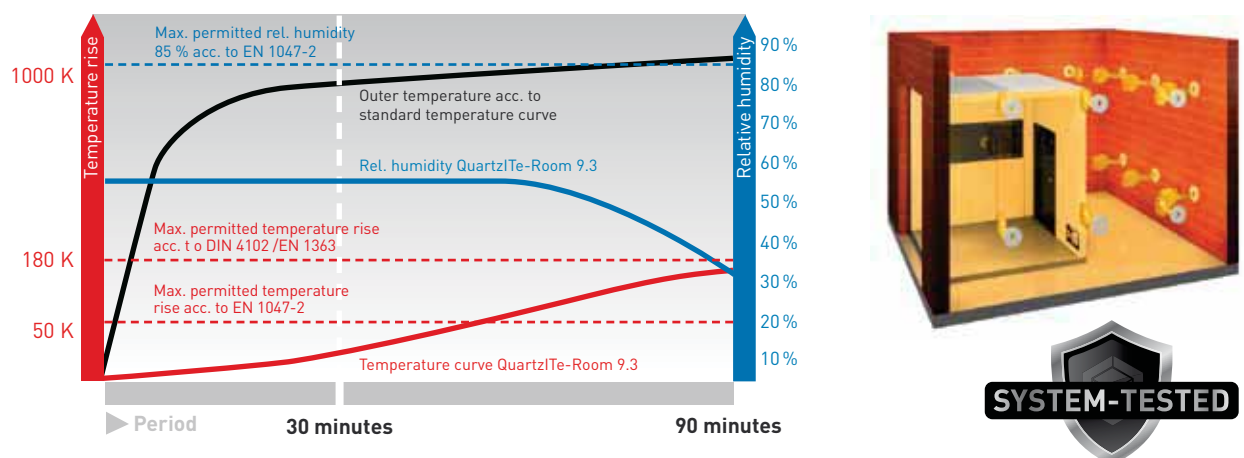
Building component test F90 acc. to DIN 4102 (90 minutes test without cooling curve)



Measured inside temperature increase for an F90 building component test can withstand up to 180 Kelvin after 90-minutes firing. Relative humidity is not measured and can reach 100 % in only a few minutes depending on material. Test documentation is limited to components and has no meaningful relevance in relation to the complete IT room system.

**Conclusion: Pure building component tests offer only insufficient protection for your IT.**

System Test (combination DIN 4102 (EN 1363) and EN 1047-2)



The temperature rise may not exceed the max. permitted limited value of 50 K and a relative humidity of 85 % during the first 30 test minutes. After this period the limited values acc. to DIN 4102 (EN 1363) are permitted. This testing scenario demonstrates the behaviour of critical connections for building components.

**Conclusion: Only system-tested products provide the required protection for your IT!**

## System-Tested Security for Your Data

A proven F90 fire resistance according to international building standards fulfills construction related fire protection regulations, but does not correspond to the physical limit values for IT-systems. The consideration of the limit values defined in EN 1047-2 is therefore a „must“ in order to guarantee high availability requirements.

### Comparison DIN 4102 (EN 1363) and Combination DIN 4102 (EN 1363) with EN 1047-2

	DIN 4102 (F90-Building component test)	Combination DIN 4102 with EN 1047-2
Safety standard for	Building components	Data Rooms
Objective	Protection of persons	Protection of IT
Test type	Individual component test	System test
Firing period	90 minutes acc. to temperature-time curve	90 minutes acc. to temperature-time curve
Cooling curve	No	No
Period of temperature measurement	90 minutes	90 minutes
Max. temperature rise	140 to 180 K	50 K during 30 minutes afterwards 140 to 180 K
Max. relative humidity	Not measured	max. 85 % during 30 minutes

### Test Certificates



**Conclusion:** The QuartzITe product line was tested for realistic and potential hazards allowing for substantiated and supported statements relating to strength and stability coupled with highly professional security standards.

# Fire resistance classes

## Which Protection Level Is Adequate?

Adequate security for IT infrastructures not only requires the protection of single components. Already a professional basic protection demands a harmonized complete system with consistent security levels for all components.

### Building component tests acc. to DIN 4102 (EN 1363) ★

This standard defines fire-protective terms, requirements and test procedures for building components. Building components considered in this standard are walls, ceilings, support beams and pillars etc. and distinguishes between fire resistance periods (e.g. 30, 90 or 120 minutes) in fire resistance classes (e.g. F30, F90 or F120). Space enclosing components e.g. may not exceed an increase of temperatures of 140 Kelvin during a fire test from starting temperature of the specimen at the beginning of the test. At no point of measurement an increase of temperatures more than 180 Kelvin is permitted. Beside at no point flame passage of the space closing component may happen. Specimen have to undergo a heat stress according to the international uniform-temperature-time-curve.

### System test following DIN 4102/EN 1363 ★★

System tests go a crucial step further compared to simple component tests. These tests are done for all relevant construction parts of a construction system in a combination with each other. As a result a well-founded and provable point can be made about the very critical connections like wall/ceiling, door connection and cable duct entries. These test scenarios need to comply with the limited values of the component test as well.

### System test following DIN 4102/EN 1363 combined with EN 1047-2 ★★★

For the protection of IT systems this combination of tests go one very crucial step further. In this test scenario additionally to the relevant requirements resulting out of constructional DIN norms, limited values acc. to of EN 1047-2, which are very important to IT infrastructures are guaranteed. Products which are tested in that way ensure provably compliance with limited values (rise of temperature < 50 Kelvin and rel. humidity < 85%) acc. to EN 1047-2 over a specific period of 30 minutes.

### ECB-S Certification acc. to EN 1047-2 ★★★★

With the ECB-S certification according to EN 1047-2 products provide best possible security. The QuartzlTe product line is not ECB-S certified. If you require the highest available protection level for your IT, request informations about the RZ-Products GranlTe line.


## TABLE PROTECTION CLASSES


	★	★★	★★★	★★★★
<b>IT-Room</b>				
GranlTe-Room.cert				ECB-S
QuartzlTe-Room.sys 9.3			F90+	
QuartzlTe-Room.sys 9.0		F90		
<b>Outdoor RZ</b>				
GranlTe-Outdoor.cert				ECB-S
QuartzlTe-Outdoor.sys 9.0	F90			
QuartzlTe-Outdoor.sys 3.0	F30			
<b>Mini-Data-Center</b>				
GranlTe-MDC.cert				ECB-S
QuartzlTe-MDC.sys 9.3			F90+	
QuartzlTe-MDC.sys 9.0		F90		
<b>Safe</b>				
GranlTe-Safe.cert S/SE 11-15				ECB-S



# QuartzITe Product Features

## The Right Product for All Requirements

 <b>PRODUCT FEATURES</b>	Room 9.0	Room 9.3	Outdoor 3.0	Outdoor 9.0	MDC 9.0	MDC 9.3
Modular construction	✓	✓	✓	✓	✓	✓
IT security room door	✓	✓	✓	✓	✓	✓
Variable dimensions of height, width and length	✓	✓	✓	✓		
Available in different sizes					✓	✓
Outer facade of individual designs			✓	✓		
Modular control cabinet with energy-management system as option	✓	✓	✓	✓		
Fire damper for airconditioning and/or overpressure release	✓		✓	✓		
Pneumatic overpressure slide		✓				
Electrical ventilation slide		✓				
Soft cable duct	✓	✓	✓	✓	✓	✓
Hard cable duct (as option)	✓	✓	✓	✓	✓	✓
Disassembly/reassembly with IT-systems in operation	✓	✓			✓	✓
Independent of locations	✓	✓	✓	✓	✓	✓
Low net weight	✓	✓			✓	✓
Cooling system					✓	✓
Weather-resistant			✓	✓		

 <b>TEST CERTIFICATES</b>	Room 9.0	Room 9.3	Outdoor 3.0	Outdoor 9.0	MDC 9.0	MDC 9.3
System test	✓	✓			✓	✓
<b>Fire protection</b>						
Max. 50 Kelvin temperature increase and max. 85 % rel. air humidity during 30 minutes (no controlled cooling down period)		✓				✓
System test F90 fulfilling DIN 4102 resp. EI 90 fulfilling EN 1363 (Cell construction including additional function modules)	✓	✓			✓	✓
F120 fulfilling DIN 4102 resp. EI120 fulfilling EN 1363 by individual component test (wall system only)	✓	✓				
F90 fulfilling DIN 4102 resp. EI90 fulfilling EN 1363 by individual component test	✓	✓		✓	✓	✓
F30 fulfilling DIN 4102 resp. EI30 fulfilling EN 1363 by individual component test	✓	✓	✓	✓	✓	✓
Triple ball impact fulfilling DIN 4102	✓	✓				
<b>Burglar protection</b>						
WK <sup>1</sup> 3 as component test fulfilling EN 1627/ EN 1630 (door system only)	✓	✓	✓	✓		
WK <sup>1</sup> 2 as system test fulfilling EN 1627/ EN 1630 for the cell design and its additional integrated components, e.g. doors	✓	✓			✓	✓
WK <sup>1</sup> 2 as component test fulfilling EN 1627/ EN 1630 (door system only)	✓	✓	✓	✓	✓	✓
<b>Protection against water</b>						
Stagnant water, 72 hours 40 cm, max. 20 drops	✓	✓	✓	✓		
Extinguishing water, IP X6 as system test fulfilling EN 60529 (cell design including integrated additional components)	✓	✓	✓	✓	✓	✓
Rel. air humidity max. 85 % during 30 minutes		✓				✓
Protection against strong driving rain fulfilling DIN 4108-3			✓	✓		
<b>Dust protection</b>						
IP <sup>3</sup> 5x as system test fulfilling EN 60529 (cell design including additional integrated components)	✓	✓	✓	✓	✓	✓
<b>Smoke protection</b>						
Smoke tightness following EN 1634-3 (DIN 18095)		✓	✓	✓	✓	✓
<b>EMC protection</b>						
Screening attenuation test fulfilling EN 50147-2	✓	✓	✓	✓		

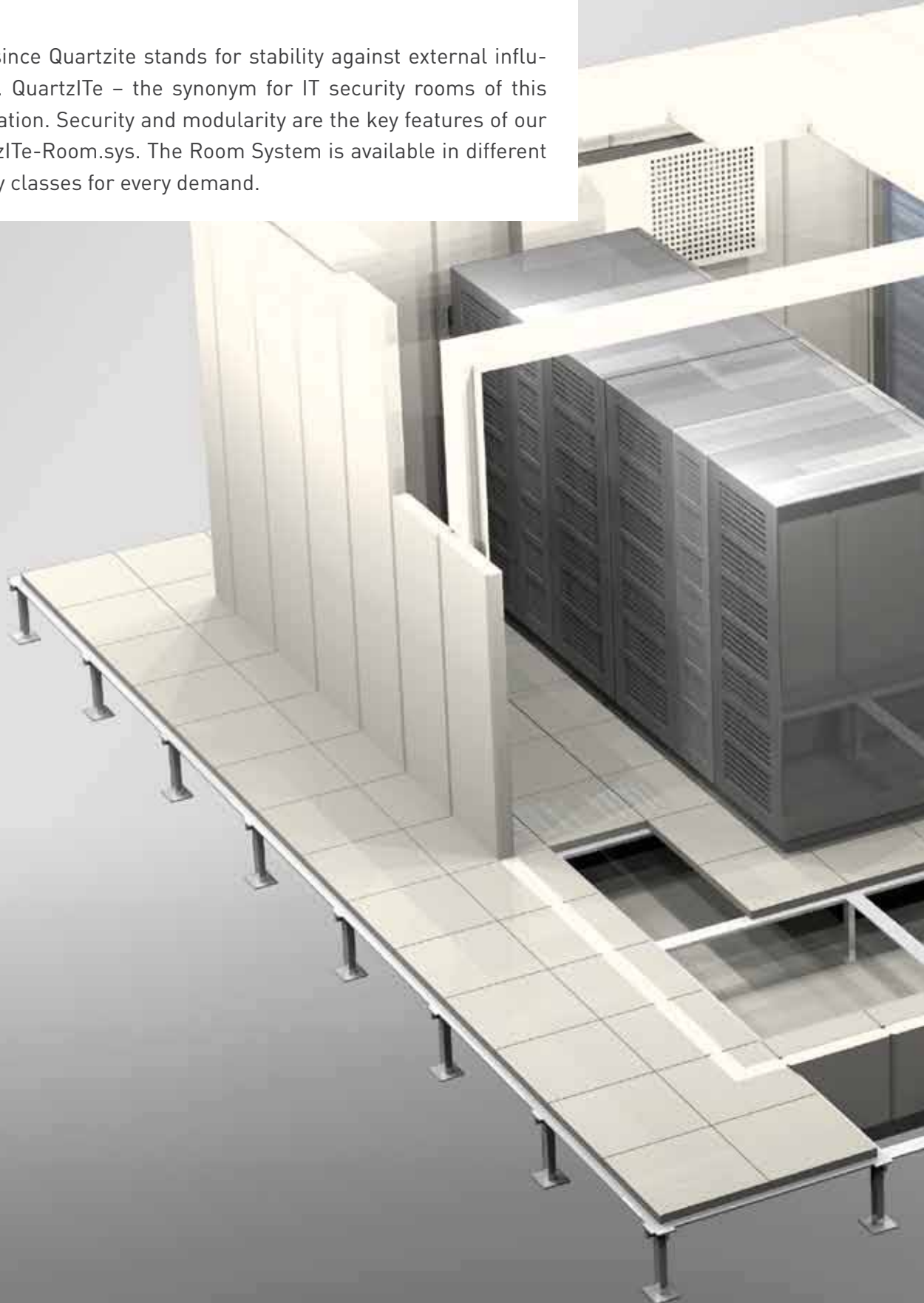
<sup>1</sup> WK = Resistance Class

<sup>2</sup> IP = International Protection Code

# QuartzITe-Room.sys

## The Right Security Rating Modular – Customized – Secure

Ever since Quartzite stands for stability against external influences. QuartzITe – the synonym for IT security rooms of this generation. Security and modularity are the key features of our QuartzITe-Room.sys. The Room System is available in different quality classes for every demand.



**SYSTEM-TESTED**



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# QuartzITe-Room.sys

Modular – Customized – Secure



## QuartzITe-Room.sys 9.0



### Product Details

- Wall- and ceiling elements
- Modular design
- Variable dimensions of height, width and length
- Modular control cabinet with energy-management system as option
- Fire damper for airconditioning
- IT security room door
- Soft cable and tube ducts

### Test Certificates

- F90 system test acc. to DIN 4102 and EI 90 acc. to EN 1363
- EMC protection
- Burglar protection WK2 following EN 1627 / 1630
- Door in WK 3 as option
- Dust protection IP 5x acc. to EN 60529
- Protection against fire-fighting water IP x6 acc. to EN 60529
- Protection against stagnant water, 72 hours 40 cm, max. 20 drops

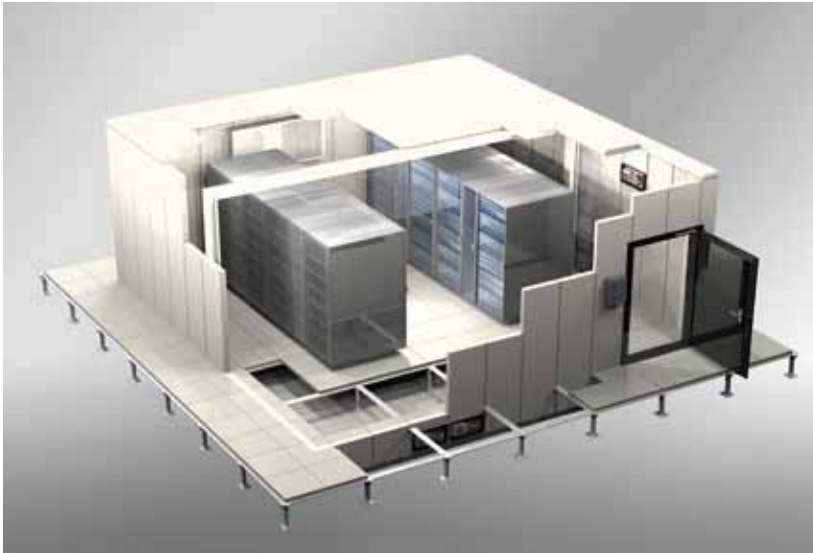


### Equipment Options

- Mechanical key lock
- Electronic lock, PIN-code lock, motor lock, etc.
- Hard cable duct
- Electronic system control
- Lighting system
- Raised floor
- Fire warning system
- Early fire warning system
- Monitoring- and energy efficient systems
- Burglar alarm system
- Access control
- Fire extinguishing system
- UPS
- Free cooling



## QuartzITe-Room.sys 9.3



### Product Details

- Wall- and ceiling elements, floor
- Modular design
- Variable dimensions of height, width and length
- Modular control cabinets and energy management system as option
- Pneumatic overpressure slide
- Electrical ventilation slide
- IT security door system
- Soft cable- and tube ducts

### Test Certificates

- F90 system test acc. to DIN 4102 and EI 90 acc. to EN 1363 **plus** at least 30 mins. within admissible values of EN 1047-2 for temperature rise and relative humidity
- Smoke tightness following EN 1634-3 (DIN 18095)
- EMC protection
- Burglar protection WK 2 following EN 1627 / 1630
- Door in WK 3 as option
- Dust protection IP 5x acc. to EN 60529
- Protection against fire fighting water IP x6 acc. to EN 60529
- Protection against stagnant water, 72 hours 40 cm, max. 20 drops



### Equipment Options

- Mechanical key lock
- Electronic lock, PIN-code lock, motor lock, etc.
- Hard cable duct
- Electronic system control
- Lighting system
- Raised floor
- Fire warning system
- Early fire warning system
- Monitoring and energy-efficient systems
- Burglar alarm system
- Access control system
- Fire extinguishing system
- UPS
- Free cooling

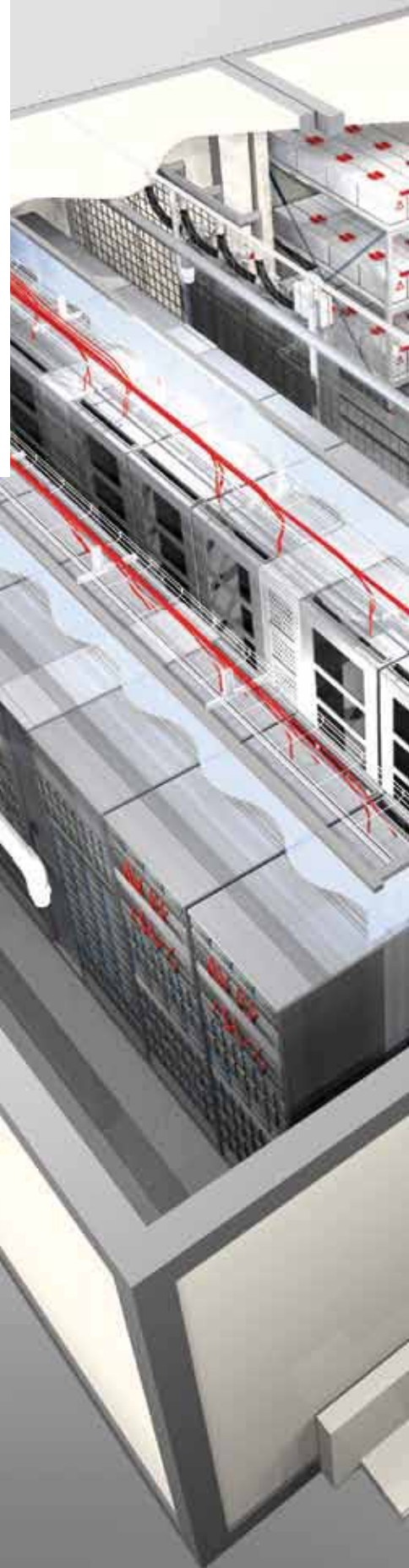


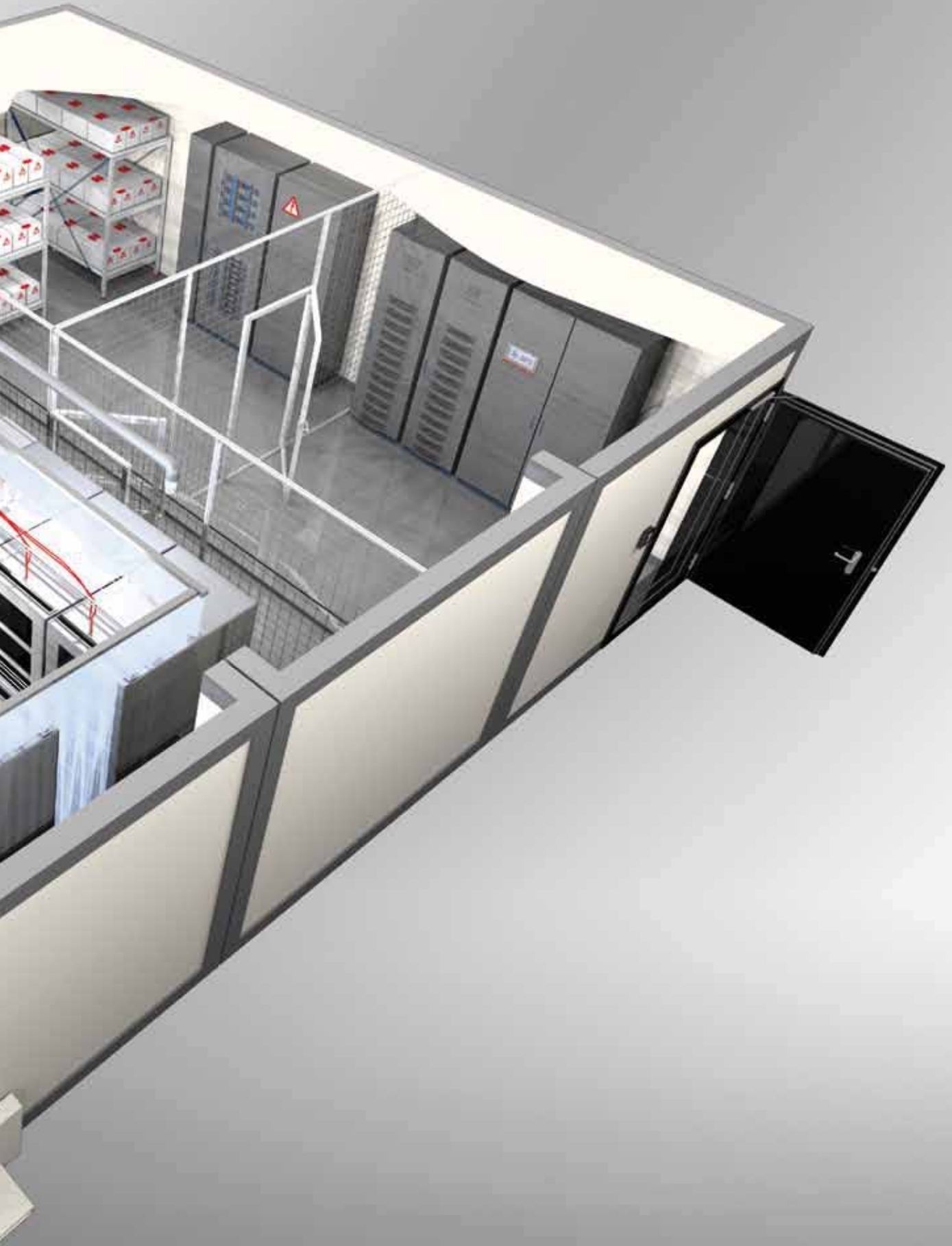
# QuartzITe-Outdoor.sys

## IT Protection in Outdoor Areas Versatile – Robust – Certified

With the QuartzITe-Outdoor.sys RZ-Products offers a highly professional alternative for conventional IT areas in existing buildings. This secure outdoor solution is almost predestined if buildings are stretched to their capacity limits and no free areas are available for the implementation of the IT infrastructure.

The system tested outdoor data center is usable as durable solution as well as backup or temporary data center and fulfills all security-related standards.

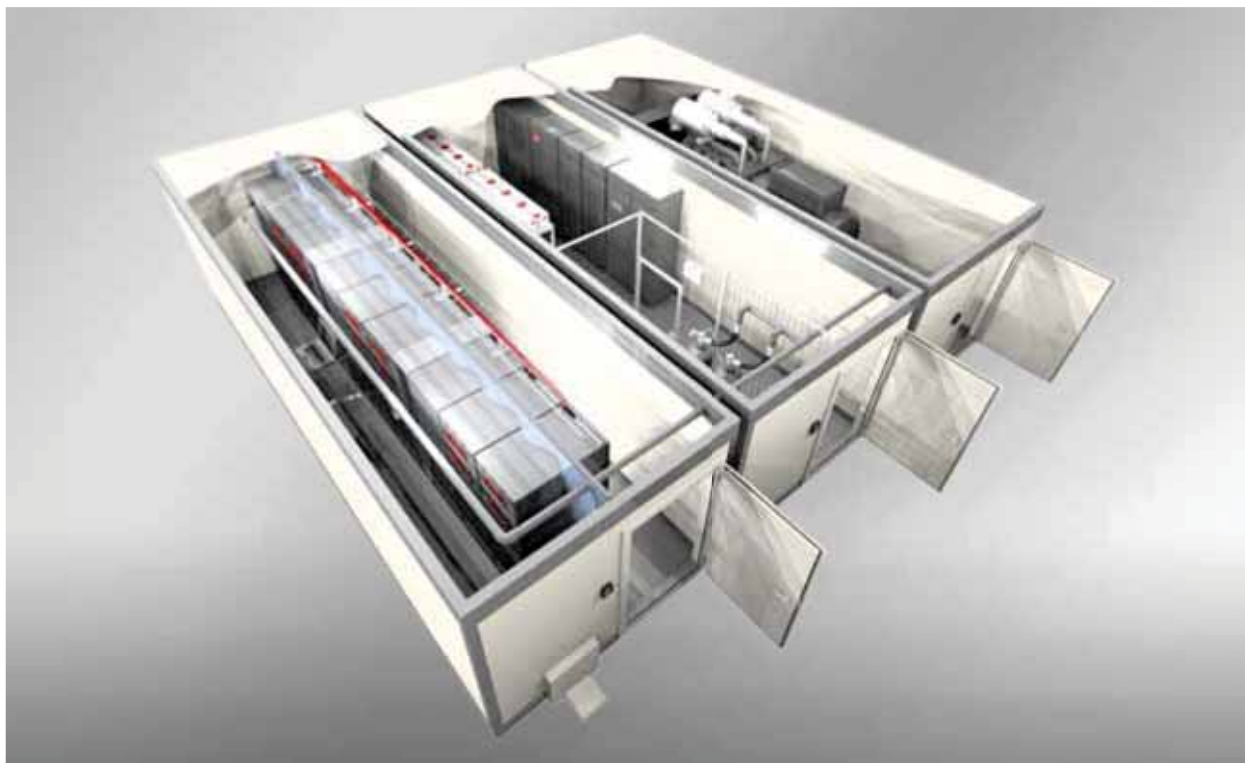




# QuartzITe-Outdoor.sys

Versatile – Robust – Certified

## QuartzITe-Outdoor.sys 3.0



### Product Details

- Modular design
- Outer facade of individual designs
- Multi-level constructions possible
- Variable dimensions of height, width and length
- Soft cable duct
- Security door system

### Test Certificates

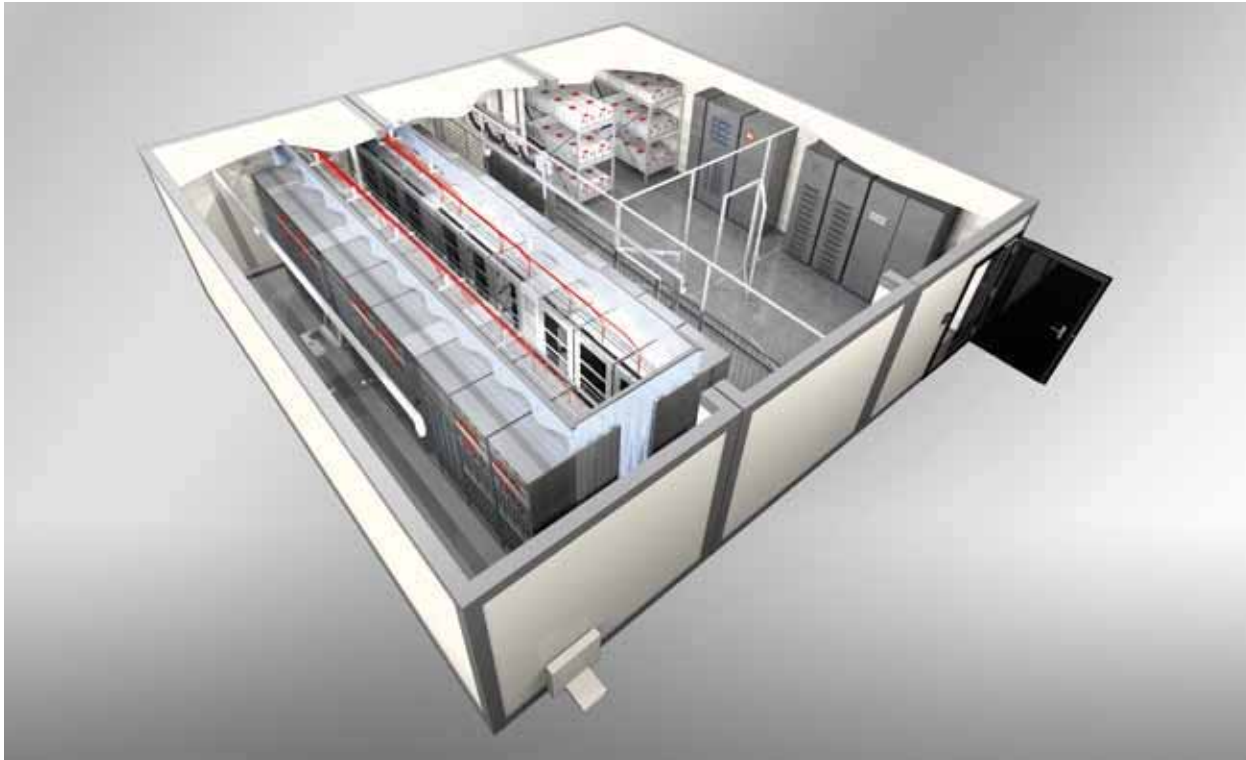
- F30 acc. to DIN 4102 and EI 30 acc. to EN 1363
- Burglar protected door WK 2 (WK 3 as option) following EN 1627 / 1630
- Protection against fire fighting water IP x6 acc. to EN 60529
- Dust protection IP 5x acc. to EN 60529
- Smoke tightness following EN 1634-3

### Equipment Options

- Mechanical key lock, electronic lock, PIN-code lock, motor lock, etc.
- Hard cable duct
- Electronic system control
- Lighting system
- Raised floor
- Fire dampers
- Free cooling
- Fire warning system
- Early fire warning system
- Fire extinguishing system
- UPS
- Access control system
- Monitoring and energy-efficient systems
- Burglar alarm system
- Weather canopy (door)



# QuartzITe-Outdoor.sys 9.0



## Product Details

- Modular design
- Outer facade of individual designs
- Multi-level constructions possible
- Variable dimensions of height, width and length
- Soft cable duct
- Security door system

## Test Certificates

- F90 acc. to DIN 4102 and EI 90 acc. to EN 1363
- Burglar protected door WK 2 (WK 3 as option) following EN 1627 / 1630
- Protection against fire fighting water IP x6 acc. to EN 60529
- Dust protection IP 5x acc. to EN 60 529
- Smoke protection following EN 1634-3
- EMC protection
- Protection against stagnant water, splashing water and driving rain

## Equipment Options

- Mechanical key lock, electronic lock, PIN-code lock, motor lock, etc.
- Hard cable duct
- Electronic system control
- Lighting system
- Raised floor
- Fire dampers
- Free cooling
- Fire warning system
- Early fire warning system
- Fire extinguishing system
- UPS
- Access control system
- Monitoring and energy-efficient systems
- Burglar alarm system
- Weather canopy (door)

# QuartzITe-MDC.sys

## Security for Small Applications Flexible – Space Saving – Fully Fitted

QuartzITe-MDC.sys is a Mini-Data-Center offering a high degree of security for single racks or small server rooms and is scalable at any time. It withstands all major physical risks and because of its dimension removal and reinstallation is fast and easy. Its space-saving features offer the installation in small IT locations. QuartzITe-MDC.sys can be optionally equipped with all protective measures.

**SYSTEM-TESTED**



# QuartzITe-MDC.sys

Flexible – Space Saving – Fully Fitted



## QuartzITe-MDC.sys 9.0



### Product Details

- Modular design
- Wall-, ceiling and floor elements
- Door with multiple locking
- Low net weight – low static floor loads
- Available in different sizes
- Energy-efficient cooling system
- Double-door system



### Test Certificates

- F90 System-test acc. to EIN 4102 and EI 90 acc. to EN 1363
- Burglar protection WK 2 following EN 1627 / 1630
- Dust protection IP 5x acc. to EN 60529
- Protection against fire fighting water IP x6 acc. to EN 60529
- Smoke tightness following EN 1634-3 (DIN 18095)

### Equipment Options

- Mechanical key lock, electronic lock, PIN-code lock, motor lock, etc.
- Hard cable duct
- Fire alarm system
- Early fire warning system
- Fire extinguishing system
- Monitoring and energy-efficient systems
- Burglar alarm system
- Access control system
- UPS
- 19" rack
- Forklift accessible pedestal

# QuartzITe-MDC.sys 9.3



## Product Details

- Modular design
- Wall-, ceiling and floor elements
- Door with multiple locking
- Low net weight – low static floor loads
- Available in different sizes
- Energy-efficient cooling system
- Double-door system



## Test Certificates

- F90 system test acc. to DIN 4102 and EI 90 acc. to EN 1363 **plus** at least 30 mins. within admissible values of EN 1047-2 for temperature rise and relative humidity
- Burglar protection WK 2 following EN 1627 / 1630
- Dust protection IP 5x acc. to EN 60529
- Protection against fire fighting water IP x6 acc. to EN 60529
- Smoke protection following EN 1634-3 (DIN 18095)

## Equipment Options

- Mechanical key lock, electronic lock, PIN-code lock, motor lock, etc.
- Hard cable duct
- Fire warning system
- Early fire warning system
- Fire extinguishing system
- Monitoring and energy-efficient systems
- Burglar alarm system
- Access control system
- UPS
- 19" rack
- Forklift accessible pedestal

# References

We Secure the IT Infrastructures of Our Clients.  
Every Day. Worldwide.

More than 1,000 satisfied clients have made use of our knowledge and long experience in the development, production and realisation of security-related products. The list includes companies in industry and telecommunication, banking, insurance, and even energy utilities, authorities as well as IT service providers



**Tönsmeier Dienstleistungs GmbH & Co. KG**  
IT-Outdoor Container with smart details for a practicable high-security IT infrastructure

**Data and Facts:**

Project: Outdoor-Data Center  
Sector: Waste disposal and environmental services  
Size: 100 sqm.

"I simply was in lack of imagination regarding an outdoor data center and I thought about some kind of office container, like those which are used often in case of shortage of office space. After being offered the opportunity of visiting such a containerized solution, and having appreciated its convincing functionality, my opinion changed. Also the price-performance ratio was an absolute advantage in comparison with a new building, thus we finally decided to go for it. The project management took care of our individual requirements, such as a loading ramp or the unpacking room and was not only brilliant regarding project management but also for professional electronic knowledge. The cooperation was wonderfully non-bureaucratic and the 'climate' was very comfortable. Following the slogan 'Keep it simple', we realized together a data center, which is preparing us for the future and does not exclude further expansions. On the contrary: We have enough place for more!" Patrick Schumacher (System administrator at Tönsmeier)



**Vallourec & Mannesmann Tubes**  
New data center copes with high security demand

**Data and Facts:**

Project: Room-in-room system with TÜV-step 3  
Installation and certification with systems in operation  
Sector: Steel tube production  
Size: 260 sqm.

"We operate on each site data centers which operate the locally required data and processes. As our IT-department located at Mülheim since the eighties, we decided to implement a completely new data center for the realisation of this target. For the realization of this goal. We were simply offered the best alternative. As we wanted to avoid modifications of our building, this solution convinced us completely. Also the new climatization concept does not only distinguish itself by its reliability. Furthermore it offers ecological as well as economical advantages, as it disposes of a high degree of energy efficiency." Norbert Jung (Department Manager, Server & Network Management)



## Green IT

### Optimising Energy Consumption

**Green IT i.e. Energy Efficiency is an important factor in modern data center construction. Not only the whole planning and realisation but also the following operation should be appropriately planned.**

Server rooms, Mini Data Centers and Outdoor Data Centers of the QuartzITe-Series are conceived on the basic principle of optimum raw material utilisation, with as little offcut and waste as possible. And not forgetting the targeted use of recyclable materials as well as very clean assembly and installation of IT rooms, with negligible or no negative influence on the environment. The objective is to achieve sustainability.

The ability to go far into the future and long service life are specially guaranteed here through flexible solutions: uncomplicated dismantling & re-assembly avoid unnecessary and costly new acquisitions. Furthermore, long thought-out ideas and future-orientated concepts guard against unpleasant surprises demanding subsequent costs.

Energy consumption of data centers and server rooms is directly dependant on the quality of installation. And finally it is the tightness and quality of the ceiling & wall elements which is decisive for optimum cooling of the server and thereby for energy efficient operation.

# Intelligent Solutions for Highly Efficient Data Centers



## GranITe

GranITe – the synonym for highest security and reliability!

The GranITe line offers top level protection against physical risks, guarantees highest availability and reduces downtimes to a minimum – a safety wing with ECB-S certificate!



## MonIToring

The Monitoring System of RZ-Products makes a decisive contribution towards professional energy management and uninterrupted monitoring of IT. They do not only detect & display faults, they can also considerably enhance the efficiency of IT systems through analysis of the energy consumption.



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