

-DENIOS-

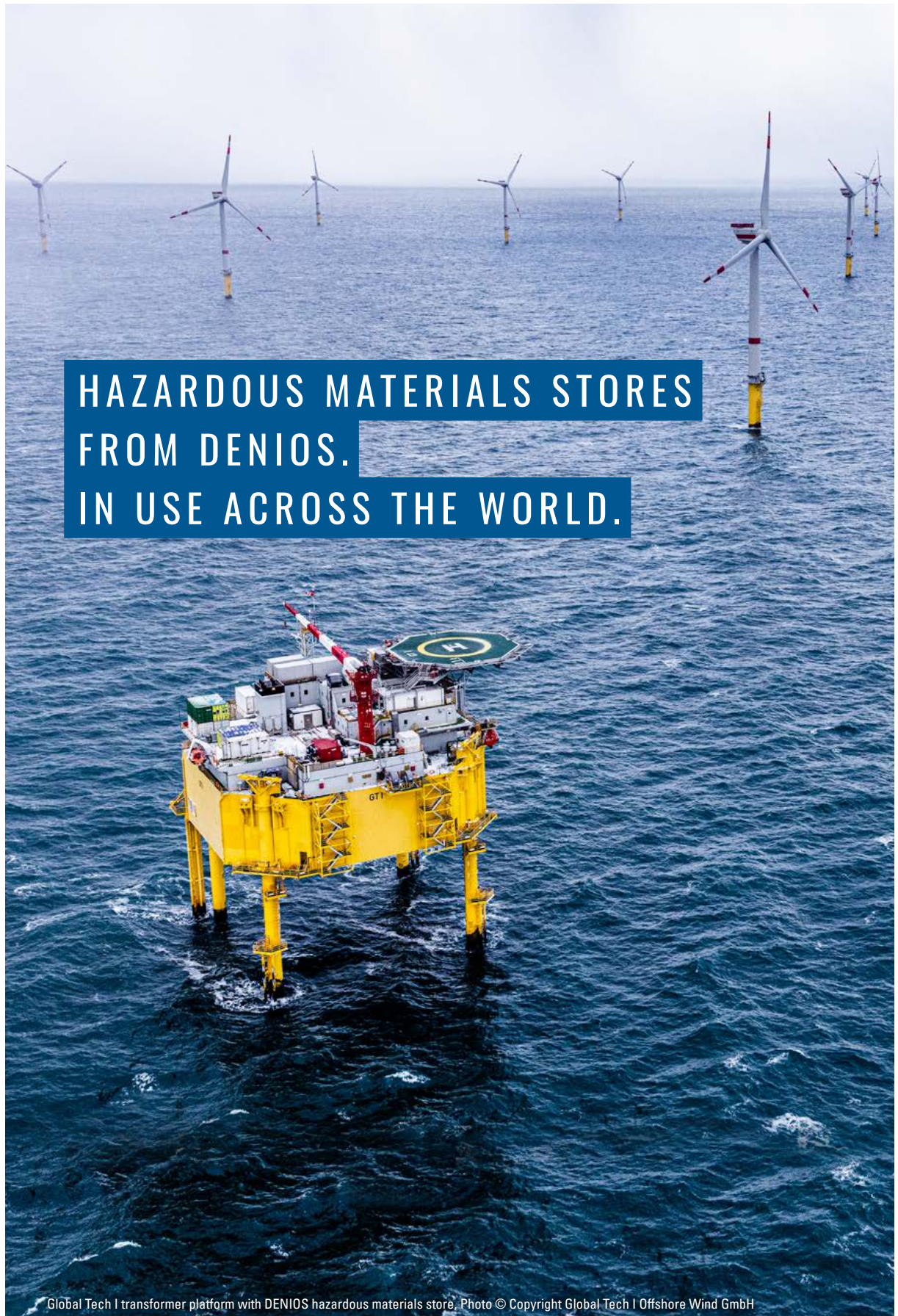
**ENVIRONMENTAL PROTECTION
& WORK SAFETY**



**STORING HAZARDOUS
MATERIALS SAFELY.**

HAZARDOUS MATERIALS STORES FROM DENIOS. CUSTOMISED SOLUTIONS.

HAZARDOUS MATERIALS STORES FROM DENIOS. IN USE ACROSS THE WORLD.



When hazardous materials have to be stored on a transformer platform in the middle of the North Sea at the Global Tech I offshore wind farm, it's a job that's just made for DENIOS. It clearly shows how we translate over 35 years of experience as a developer and manufacturer of hazardous material stores into perfectly adapted, customised solutions. Our specialist Consulting and Service departments as well as the state-of-the-art production facilities at our company headquarters in Bad Oeynhausen work closely together to create these solutions. Here, our experts plan, develop and manufacture both standard designs and customised individual orders. The qualified and certified DENIOS Service department guarantees professional maintenance and servicing after commissioning.

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With a hazardous materials store from DENIOS, you are taking responsibility for the environment and for work safety. We will support you with a holistic concept and customised solutions.

Hazardous materials stores from DENIOS. Customised solutions.



Helmut Dennig – CEO



Alexander Dolipski – COO



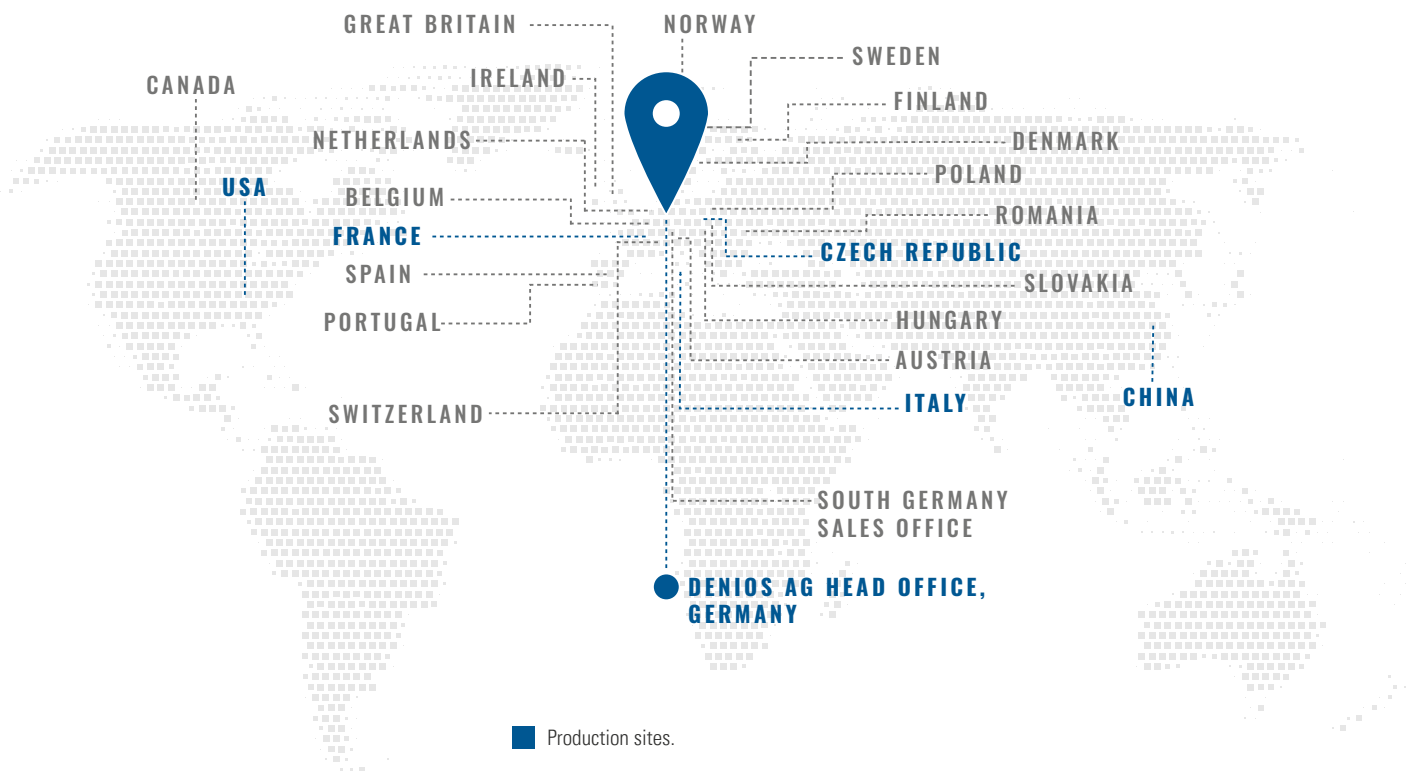
Ansgar Jost – Director Engineered Solutions

WORKING FOR YOU, ACROSS THE WORLD.

PERSONAL SERVICE EVERY TIME. ON SITE EVERY TIME.

Are you looking for an international partner and problem solver for the storage of hazardous substances who is always close at hand? You can rely on DENIOS' 35 years of experience as a developer and manufacturer. We operate worldwide and are therefore very familiar with local legislation. We are your one-stop shop for all hazardous materials store services - from personal consultations and on-site analysis to individual product configuration, commissioning and maintenance. Ensuring your project will run smoothly and in accordance with your requirements. Just get in touch.

- Over 1000 employees.
- More than 20 branches in Europe, Asia and America.
- 6 production sites.
- Approx. 3000 room systems sold per year worldwide.
- Approx. 200 million Euro turnover a year.
- Over 35 years' experience.



International customers that trust DENIOS.



BOSCH



Bayer





It's obvious: only those who have a precise picture of the situation can provide competent and solution-oriented advice. There should be no surprises, especially when planning a hazardous materials store. With an in-depth analysis by our experts on site, costly mistakes can be avoided right from the start.

HAZARDOUS MATERIALS STORES FROM DENIOS. PRODUCT VARIETY FROM THE MANUFACTURER.

With 35 years of experience, state-of-the-art production and competent experts, you'll find a unique variety of products and equipment at DENIOS. Whether your hazardous materials store needs thermal insulation, heating or air-conditioning, or fire protection with up to 120 minutes fire resistance - we can provide custom solutions, whether as a standard design or individually manufactured.



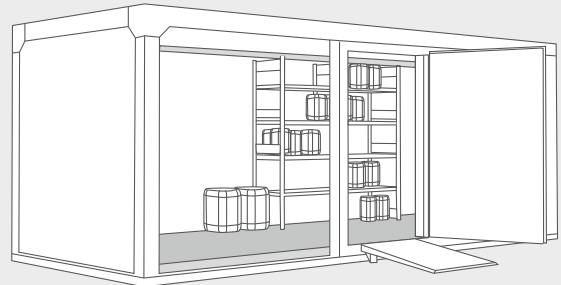


HAZARDOUS MATERIALS STORES FROM DENIOS. YOUR FIRST CHOICE.

Your storage capacity requirements (small containers / drums / IBCs) determine the basic shape of the hazardous materials store (walk-in / shelving / compact). The medium to be stored and the installation conditions lead to the choice of either a hazardous materials store with optional thermal insulation or a hazardous materials store with fire protection. Thanks to numerous configuration options, our standardised hazardous materials stores can be tailored to your individual needs. A customised solution with project planning is an option at any time. Just get in touch.

WALK-IN.

If you want to store small containers, a walk-in hazardous materials store is the optimal solution. DENIOS models ensure a high level of user comfort: the entry height is only 150 mm. The built-in shelves allow the contents to be conveniently and clearly arranged. If additional drums or larger containers need to be stored, the floor can also be used as a storage area.



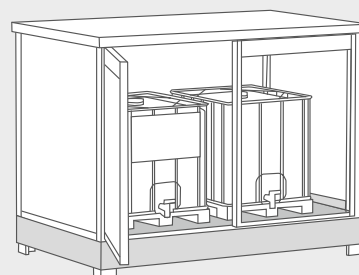
SHELVING.

If larger quantities of hazardous substances need to be stored on Euro/chemical pallets, in drums or IBCs, a storage container with shelving is the best choice. The compartment dimensions and load capacities of the various versions are optimally designed for the size of the stored goods. Storage containers with shelving can be loaded with a hand-operated electric forklift. Extra-deep designs offer maximum storage capacity for loading from both long sides.



COMPACT.

Due to the small space requirement, the compact hazardous materials store is often used close to production or the workplace. It allows direct access to IBCs, drums or small containers and can also be used as a dispensing or filling station.



HAZARDOUS MATERIALS STORES WITH FIRE PROTECTION.

You can safely store flammable liquids in DENIOS fire-rated stores, even if there is no building clearance. The double frame construction, which serves as an enclosure for high-quality fire protection insulation (construction material class A), ensures fire resistance from the inside and outside for up to 120 minutes in the event of a fire.

Thanks to a wide range of equipment options, your fire-rated store can be adapted to your individual requirements, for example with extinguishing systems, air-conditioning and ventilation technology or digital access and condition monitoring.



HAZARDOUS MATERIALS STORES WITH THERMAL INSULATION.

Hazardous materials stores with thermal insulation are used for frost-free storage and heat protection of temperature-sensitive hazardous materials. The proven steel frame design is covered on all sides with insulating panels. Reliable air conditioning technology protects the sensitive stored goods. Systems can be fitted with better heating, cooling equipment or air conditioning systems if required.



STRUCTURAL ANALYSIS. SAFE UNDER EVERY LOAD.



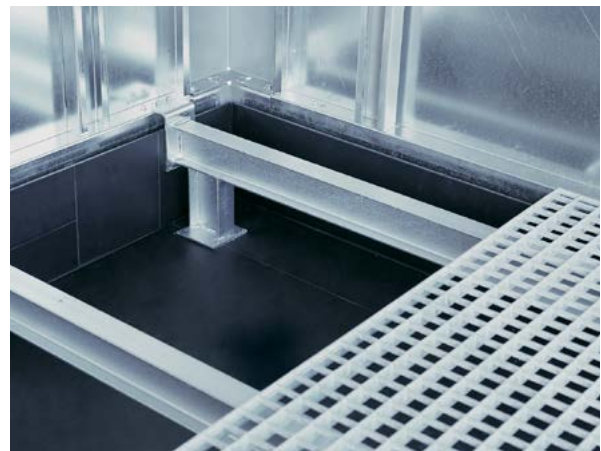
Protected in wind and weather: to ensure that DENIOS hazardous materials stores always stand firm wherever they are, we test them beyond the normal load limits. In addition to extensive theoretical calculations, we carry out long-term tests and practical trials. In this way, we ensure that the statics for our hazardous materials stores can withstand external forces from wind, snow and earthquake loads. Please refer to the product descriptions on the following pages for the specific load capacity of our products. Regional load differences in the form of load zones can be found on our website.

VERSATILITY. FOR PERFECT PROTECTION.

When equipping a hazardous materials store, the potential danger posed by the stored goods must be taken into account, alongside the sensitivity of the stored goods to temperature influences. As the operator, you will analyse these two factors in your risk assessment. The necessary protective measures for the hazardous materials store are derived from this document.

THE SPILL PALLET. PROTECTION FROM LEAKS.

The basis of a hazardous materials store is the spill pallet. It ensures that hazardous substances can be contained in the event of a leak and that they do not escape into the environment. It is approved for water hazard classes WGK 1-3 in accordance with the Regulation on equipment for handling water-polluting substances (AwSV) and is an integral part of the statically tested steel structure. If corrosive or caustic substances are stored, the spill pallet must be lined with a resistant inliner in polyethylene (PE) or stainless steel.



Hazardous materials store with PE inliner in the spill pallet for storing corrosive or caustic substances.

TEMPERATURE UNDER CONTROL. PROTECTION FROM EXTERNAL FACTORS.

In addition to insulated wall and roof cladding, temperature-sensitive hazardous substances require individually tailored heating, air conditioning or cooling technology. If required, temperature monitoring can be set up to control compliance with the temperature limits.



Temperature display for an air-conditioned hazardous materials store.

COMPACT KNOWLEDGE. RISK ASSESSMENT FAQs.

The risk assessment is the basis for systematic and successful safety management when handling hazardous substances. Our guide "Risk assessment for activities involving hazardous substances - FAQs" answers the most important questions and shows you what you must pay attention to as an operator.

 WWW.DENIOS.DE/FAQ-GEFAEHRDUNGSBEURTEILUNG



FIRE HAZARDS IN STORES.

NOTES AND GUIDELINES FOR STORING FLAMMABLE MEDIA.

For flammable substances (flashpoint ≤ 60 °C, classified as H226, H225 or H224) the store equipment is principally selected with the fire risk in mind. TRGS 800 specifies the criteria to be used to determine the fire hazard and how the level of fire risk is to be determined from this information. For normal fire risks, it is assumed that the protection of employees and other persons using measures in accordance with the Workplace regulations, the Industrial safety regulations and the Building law is sufficient. In the case of increased and high fire risks, various aspects must also be taken into account.

Read our guide on this subject: "Fire safety risk assessment" ➔ WWW.DENIOS.DE/RATGEBER-BRANDGEFAHR

The structural protection level is derived from the level of fire risk. Thanks to DENIOS product diversity, you'll find the right solution for every requirement:

If there is an **increased fire risk** and safety distances can be used to separate spaces, our **hazardous materials stores** are ideal. They are DIBt-approved and available with additional insulation as an option.

➔ **HAZARDOUS MATERIALS STORES FROM P. 40**

A high **fire risk** usually requires fire-resistant partitioning of the store. Stay safe with our **fire-rated stores**. They are also DIBt-approved and have certified fire protection.

➔ **FIRE-RATED STORAGE CONTAINERS FROM P. 12**

To prevent dangerous vapours from developing in the store, it can be fitted with weather-protected openings for natural ventilation. For a controlled air exchange, it is recommended to use technical ventilation with air extraction monitoring.

In addition, the following specifications must be observed when storing flammable media:

- Create equipotential bonding (earthing) (connection point provided in the hazardous materials store).
- If required, provide lightning protection.
- Country-specific requirements for air exchange rate.
- Specifications in accordance with TRGS 510.
- Specifications in accordance with ATEX Directive 2014/34/EU and 1999/92/EC.
- For hazardous materials stores without fire-resistant partitions, a distance to fire loads must be observed (usually at least 10 m).



Interior view of walk-in fire-rated store WFP with earthing device for drum and pump.

EQUIPMENT FROM DENIOS. FOR COMPREHENSIVE PROTECTION.

At DENIOS you'll find the right equipment for every task. For example, for system-related and organisational fire protection: alarms, extinguishing systems, leak detection, digital access control or video surveillance. For better sustainability: green roofs or solar panels. For better control: digital condition monitoring.

➔ **EQUIPMENT FROM P. 64**

HAZARDOUS MATERIALS STORES FROM DENIOS.

CUSTOMISED SOLUTIONS.

SECTION I

WITH FIRE PROTECTION.

DENIOS fire-rated stores offer safe 90 minute fire protection from the inside and outside thanks to their double frame design. They can be designed and equipped for any requirement - no matter where in the world they are to be used. Up to 120 minutes fire resistance is possible internationally - tested and certified as a complete system. To make sure that the process of dealing with approval bodies and insurers runs smoothly, we offer support with many years of experience and comprehensive, recognised documentation.

FIRE-RATED STORES FROM DENIOS.

NUMBER 1 ACROSS THE WORLD.



THE FIRST AND SO FAR ONLY BUILDING PRODUCTS OF THIS KIND TO BE TESTED AND APPROVED ACCORDING TO EUROPEAN LEGISLATION!

Country-specific, bureaucratic hurdles in the approval procedure are a thing of the past with the new European approval (ETA). DENIOS fire-rated stores are the first and so far only construction products of this kind with official ETA approval / CE marking in accordance with European Regulation (EU) No. 305/2011. In addition, they have been successfully tested and classified as a complete system in a fire test by the French testing institute Efectis, a body designated by the EU.

EXCELLENCE IN FIRE PROTECTION.

How can the safety of hazardous materials stores with fire protection be clearly demonstrated? By not only developing them on the basis of theoretical information from suppliers, but by subjecting them to real fire tests.

Our experience has shown that real fire tests always lead to product improvements. To ensure that the fire resistance required in the event of a fire is also maintained in the event of damage, our products go through a real baptism of fire at an independent testing institute. Step by step, our engineers follow each measurement from the sensors installed on the test object and draw decisive conclusions: do the matched components work or do they still need to be optimised?

For some companies, it is sufficient if the test is completed after the 90 minutes required in Germany. As an international supplier, however, DENIOS goes a step further and tests all products for 120-minute fire resistance in order to be able to guarantee the highest level of protection throughout Europe. Of course, the corresponding evidence for each product is provided in the documentation.

FIRE PROTECTION ANYWHERE.

Risks resulting from the storage of flammable media are the same all over the world. A fire does not care whether it breaks out in a hazardous materials store in Berlin or Beijing. That is why it is so important to have an international perspective on the issue.

Local legislation decides how the risks are to be assessed and prescribes appropriate protective measures. As DENIOS is represented in over 20 countries in Europe, Asia and North America, we are familiar with the local legislation. Our experts on site will design the optimal hazardous materials store for your application.

DENIOS also pools knowledge group-wide in order to channel it into the development of innovative products and equipment, and to continuously improve the advice and services we offer.

FIRE PROTECTION AS A SYSTEM.

The fire protection of a building product is not achieved by individual EI-120 components. Reliable fire protection results from the interaction of all the components in the system as a whole. At DENIOS, you'll receive a certificate with every hazardous materials store demonstrating that the entire system has been successfully tested. In addition, you'll benefit from our holistic approach: starting with advice, through development and production, to service, we'll find solutions together for your individual application. In this way, fire protection is ensured by a self-contained and coordinated system.

FIRE PROTECTION IN NEW DIMENSIONS.

The challenges you face as a customer drive our innovation. It's our mission to make hazardous materials storage as safe, convenient and efficient as possible.

Initially, DENIOS fire-rated stores were only equipped with wing doors, as sliding doors were not available as an alternative on the market. However, DENIOS recognised the advantages of the sliding door design for everyday work: larger room volume, protection against wind loads and electrical operation from a forklift. Without further ado, an in-house development project was started which, in contrast to the attempts of other manufacturers, successfully passed the fire test and was classified as EI 60/EI 120.



Successful performance of a fire test for different types of fire seals (cable and pipe break-through points).

BROAD-BASED FIRE PROTECTION.

Although legislation provides the framework for protective measures in hazardous materials storage and fire protection, the risk assessment and derivation of concrete measures is the responsibility of the operator of a hazardous materials store. DENIOS is in regular contact with authorities, insurance companies, fire brigades, other operators and safety officers in order to provide you with the best possible support. You'll benefit from a broad network of experts and DENIOS' 35 years of experience as a developer and manufacturer of hazardous materials stores.



RFP SD with sliding doors during fire test. Smoke is emitted from cracks but there is no flashback. In the next few moments, the protective mechanism will take effect and suppress the smoke.

RFP SD WITH SLIDING DOORS FIRE TEST.

15:00

The fire test starts! The oven is brought to over 1000 °C in just a few minutes.

15:04

The temperature at the outer shell of the room system rises abruptly to 140 °C. Smoke increases from the joints in the door area. Next, the first protective mechanism kicks in.

15:09

The smoke lessens, the protective mechanism works! The external temperature drops below 100 °C. The test is going according to plan so far. We still have 111 minutes to go.

15:16

The sound of hot steel and concrete is impressive! Longitudinal thermal expansion can reach up to 50 mm!

16:01

After 60 minutes, the El₁ 60 qualification is achieved! All sensors are within the tolerance range. No flashback, the test continues. El₁ 60 ☒

16:31

After 90 minutes, the El₂ 90 qualification has now also been achieved! Confidence to reach the next level is growing! El₁ 60 ☒ El₂ 90 ☒

16:49

We are already at minute 109 and still the structure resists the thermal stress of over 1000 °C. The external temperature is still below the maximum value of 180 °C.

17:02

World first and world class! For the first time, sliding doors withstand the fire test for 120 minutes. We have qualified El₂ 120! El₁ 60 ☒ El₂ 90 ☒ El₂ 120 ☒

HAZARDOUS MATERIALS STORES WITH FIRE PROTECTION.

WFP: WALK IN FIRE PROTECT.

- WALK-IN FIRE-RATED STORAGE CONTAINER
- FOR SMALL CONTAINERS AND INDIVIDUAL DRUMS
- STORAGE AREA: APPROX. 6-22 m²

➞ FROM P. 18



RFP 115: RACK FIRE PROTECT.

- COMPACT FIRE-RATED STORAGE CONTAINER
- STORAGE CAPACITY FOR UP TO 4 X 205 LITRE DRUMS OR 1 IBC

➞ FROM P. 22



RFP: RACK FIRE PROTECT.

- FIRE-RATED STORAGE CONTAINER WITH SHELVING
- FOR IBCS AND 205 LITRE DRUMS
- STORAGE CAPACITY FOR UP TO 8 IBCS OR 32 DRUMS

➞ FROM P. 26



RFP SD: RACK FIRE PROTECT.

- FIRE-RATED STORAGE CONTAINER WITH SHELVING AND SLIDING DOORS
- OPTIMUM USE OF SPACE FOR UP TO 12 IBCS OR 48 X 205 LITRE DRUMS

➞ FROM P. 30



DENIOS, THE FIRE PROTECTION EXPERTS.

After one and a half years of project work, DENIOS was the first manufacturer in the world to pass a fire protection test lasting 120 minutes for a fire-rated store with sliding door in accordance with the European fire protection standard EN 13501. GIT SICHERHEIT asked Carsten Heumann, Technical Supervisor Sales at DENIOS AG, about the details.

MR HEUMANN, YOU HAVE INTRODUCED A FIRE-RATED STORE WITH A SLIDING DOOR. WHAT ARE THE SPECIAL FEATURES OF THIS PRODUCT?

Our RFP SD fire protection system has sliding doors that can be moved to both sides and that close automatically (even in the event of a fire). It also allows us to meet the different market requirements in Europe with EI1 60, EI2 90 and EI2 120.

The sliding doors currently available on the market are not suitable for these requirements. That's why we decided to develop fire-rated sliding doors ourselves and have DENIOS certified as a production company for doors/ gates in accordance with EN 16034.

In order to obtain a certificate for the entire room system, including sliding doors, confirming the strictest European fire protection classification of REI 120, we had a series of real fire tests carried out.

In the process, we improved the overall construction step by step during the test procedure and finally passed the fire test with a duration of over 120 minutes. No other manufacturer of fire protection systems has managed this so far. One of the challenges is to ensure that the system offers 100% protection in case of fire, despite the size of its moving parts. Our multi-member project team, with many years of experience, solved all the design details.

WHAT ADVANTAGES DOES THE PRODUCT OFFER IN DETAIL?

The RFP SD fire-rated store with sliding doors offers 50 % more storage capacity compared to fire-rated systems with wing doors, which are usually limited to a maximum basic dimension (BRM) of 3 x 3 m. The RFP SD fire-rated sliding doors are designed to be significantly larger. The use of an electric drive and remote control can also increase convenience for customers with frequent storage and retrieval requirements. The forklift driver no longer has to leave the forklift to open and close the door. This is a considerable improvement in ergonomics as well as

work safety. There are also customers who use the fire-rated systems outdoors in windy zones (e.g. near the coast). The use of sliding doors also has advantages here.

Our fire-rated systems also offer excellent corrosion protection, as the steel frame and the two spill pallets are made of fully galvanised base material and are also coated with a high-quality paint finish.

WHAT MARKETS IS THE PRODUCT SUITABLE FOR?

We are not only focusing on the German market with its national building law requirements, but also on all other countries in Europe. DENIOS also has production sites in the USA and China.

As fire protection requirements are not standardised internationally, our product brings the variability to meet the different regulatory requirements. At the same time, we have achieved a high level of international standardisation with the product in order to control complexity.

In order to obtain fire protection certificates valid throughout Europe, all our fire-rated systems are tested according to the strictest specifications in accordance with the EN 13501-2 standard for REI 120. As a

manufacturer and market leader, this underlines the high standards we set for our technical room systems.

WHAT DO I HAVE TO LOOK OUT FOR WHEN BUYING A FIRE-RATED STORE IN GERMANY?

In Germany, hazardous materials stores for which a fire resistant F 90 fire partition in accordance with TRGS 510 is specified, can withstand a fire load of 90 minutes from the inside or outside when installed without safety distances. Our fire-rated stores have a double frame construction. If there is a fire inside, the outer supporting frame of the room system provides the necessary support. If there is a fire outside, the reverse is true.

** Interview published in GIT Sicherheit, Issue 04/21*



Carsten Heumann in front of the new fire-rated system with sliding doors

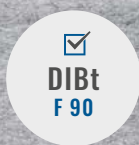


WFP-X 22

WALK-IN FIRE-RATED STORAGE CONTAINER WFP.

Fire-rated store WFP can be used for storing paints and solvents (H226-H224) in small containers and drums, for example. A monitored air-conditioning system ensures consistent quality of the temperature-sensitive substances.

The product illustrations show optional equipment. We would be happy to create a custom product configuration for you.



WALK-IN FIRE-RATED STORAGE CONTAINER WFP.

STORAGE AREA APPROX. 6-22 m².



In the walk-in fire-rated store WFP, which is also available as an international version, flammable liquids can be stored in a variety of ways. Thanks to its fire protection approval, the hazardous materials store can be integrated directly into your infrastructure without the need for safety distances, either indoors or outdoors. Six product models allow optimal adaptation to the individual installation requirements.



- ETA approval / CE marking according to European Regulation (EU) No. 305/2011.
- Tested and approved as a complete system with 90 minute fire protection (F 90 / REI 90) from inside and outside.
- International designs meeting country-specific legislation (REI 120, REI 60).

PRODUCT DESCRIPTION.

- Walk-in hazardous materials store for small containers and 205 litre drums.
- For the safe storage, dispensing or removal of flammable and water-polluting substances.
- Install directly next to the external wall of neighbouring buildings or as a fire-rated separate area, e.g. in a production hall. Exception: peroxide stores, [FROM P. 60](#).
- Water law tested, one piece, hot dip galvanised 5 mm spill pallet with removable grids (**max. load capacity: 1000 kg/m²**).
- Long-lasting corrosion protection with fully-galvanised base material and high-quality 2K paint (**RAL 9002, grey-white**).
- Fire protection panels with high insulation properties (thickness 100 mm, A class material, non-combustible).
- Lockable, self closing EI, 90-C fire-rated doors to EN 13501-2, tested in accordance with EN 1634-1, or country-specific design (EI₂ 120 or EI₁ 60) with a door opening angle of 90 ° / 115 °.
- 1-wing door (W x H: 1250 x 2000 mm) or 2-wing door (W x H: 2000 x 2000 mm), either on the short or long side of the store in the steps provided.
- For 2-wing doors, a door sequence controller ensures the doors close reliably.
- Removable crane eyes for safe use with a crane and transport safety device.
- Available in two heights:
Clear internal height: WFP-X = 2500 mm, WFP-M = 2280 mm.

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines** [SEE P. 11](#).



MODEL	WFP-X 6	WFP-X 10	WFP-X 14	WFP-X 22	WFP-M 6	WFP-M 14
Storage area (m ²)	6	10	14	22	6	14
Containment volume (l)	730	1,150	1,560	2,400	730	1,560
External dimensions* W x D x H [mm]	3,018 x 2,784 x 2,875	4,478 x 2,784 x 2,921	5,938 x 2,878 x 3,009	8,858 x 2,878 x 3,009	3,018 x 2,784 x 2,655	5,938 x 2,878 x 2,789
Internal dimensions W x D x H [mm]	2,580 x 2,560 x 2,500	4,040 x 2,560 x 2,500	5,500 x 2,560 x 2,500	8,420 x 2,560 x 2,500	2,580 x 2,560 x 2,280	5,500 x 2,560 x 2,280
Weight [kg]	2,550	3,260	4,100	5,450	2,490	4,000

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585$ kN/m² and a ground snow load $s_k = 2.5$ kN/m². The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004. Available with additional equipment for up to wind load zone 4, terrain category I ($q_{k,w} = 1.064$ kN/m²) and for up to ground snow load $s_k = 5.86$ kN/m².

ROOF DRAINAGE.

The roof drainage counteracts loads from standing water on the roof. The rainwater is directed via the roof profile to the two short sides of the room and is channeled to an outlet either through the right or left corner profile or through both. From there, it can be directed to a drainage system on site, e.g. via a drainage pipe.

EQUIPMENT OPTIONS.

For maximum comfort and improved safety, we have developed the Communication Bar. You'll have all the important information here at a glance. We will be happy to discuss with you in person which other equipment might be suitable. Our experts will design a customised solution with you on site. **An overview of additional equipment options can be found here** [FROM P. 64](#).



Central monitoring and control of all electrical components with the DENIOS Communication Bar.



Video surveillance and recording of the hazard area indoors or outdoors.



COMPACT FIRE-RATED STORAGE CONTAINER RFP 115.

RFP 115-2

The RFP 115 fire-rated storage container, in combination with a pressure relief system and cooling system, is ideally suited for storing organic peroxides outdoors.

The product illustrations show optional equipment. We would be happy to create a custom product configuration for you.



COMPACT FIRE-RATED STORAGE CONTAINER RFP 115.

STORAGE CAPACITY FOR UP TO 4 DRUMS OR 1 IBC.



Not every company needs a large store for safely housing hazardous substances. Fire-rated storage container RFP 115 offers a sturdy, fire-rated design with minimal footprint. On request, up to three additional shelves can be supplied so that you can make optimum use of the interior space.



- ETA approval / CE marking according to European Regulation (EU) No. 305/2011.
- Tested and approved as a complete system with 90 minute fire protection (F 90 / REI 90) from inside and outside.
- International designs meeting country-specific legislation (REI 120, REI 60).

PRODUCT DESCRIPTION.

- The space saving solution for storage of hazardous substances near to production, or decentralised, if required for safety or logistical reasons.
- For the safe storage, dispensing or removal of flammable and water-polluting substances.
- Install directly next to the external wall of neighbouring buildings or as a fire-rated separate area, e.g. in a production hall. Exception: peroxide stores, [FROM P. 60](#).
- Steel spill pallet with removable hot dip galvanised grids (**max. load capacity: RFP 115-2 = 1000 kg/m², RFP 115-10 = 1250 kg/m²**).
- Long-lasting corrosion protection with fully-galvanised base material and high-quality 2K paint (**RAL 9002, grey-white**).
- Fire protection panels (A class material, non-combustible) with high insulation properties.
- Lockable, self closing 1-wing fire-rated EI 90-C door to EN 13501-2, tested in accordance with EN 1634-1, or country-specific design (EI 60 or EI 120) with a door opening angle of 90 ° / 115 °.
- If required with up to three additional shelves.

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines** [SEE P. 11](#).



MODEL	RFP 115-2	RFP 115-10
Storage capacity IBC / CP / EP / Drum	0/1/1/4	1/1/1/4
Containment volume (l)	220	1,000
External dimensions* W x D x H [mm]	1,910 x 1,980 x 2,376	1,910 x 1,980 x 2,376
Compartment dimensions W x D x H [mm]	1,267 x 1,480 x 1,958	1,267 x 1,480 x 1,406
Weight [kg]	1,075	1,075

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585 \text{ kN/m}^2$ and a ground snow load $s_k = 2.5 \text{ kN/m}^2$. The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004. Available with additional equipment for up to wind load zone 4, terrain category I ($q_{k,w} = 1.064 \text{ kN/m}^2$) and for up to ground snow load $s_k = 5.86 \text{ kN/m}^2$.

ROOF DRAINAGE.

The roof drainage counteracts loads from standing water on the roof. The rainwater is directed via the roof profile to the two short sides of the room and is channeled to an outlet either through the right or left corner profile or through both. From there, it can be directed to a drainage system on site, e.g. via a drainage pipe.

EQUIPMENT OPTIONS.

DENIOS fire-rated stores WFP and RFP can also be equipped with pressure relief via roof panel. It ensures controlled pressure equalisation in the event of an explosion. Get in touch: we will be happy to discuss your individual requirements in a personal consultation. Our experts will design a customised solution with you on site, offering high levels of safety and maximum convenience.

An overview of additional equipment options can be found here [FROM P. 64.](#)



In the event of an explosion, the pressure is relieved via the roof panel. The weather protection prevents snow loads affecting operation.



Enclosed controls: controls are protected from unauthorised access in the front of the switch cabinet.



RFP 615.30

FIRE-RATED STORAGE CONTAINER WITH SHELVING RFP.

RFP fire-rated storage containers are ideally suited for storing large quantities of hazardous substances. In the accessible version, they can also be loaded with a high-lift truck. Outdoor lighting with motion sensor ensures good visibility.

The product illustrations show optional equipment. We would be happy to create a custom product configuration for you.



RFP 315.20



RFP 315.30



RFP 615.20

FIRE-RATED STORAGE CONTAINER WITH SHELVING RFP.

STORAGE CAPACITY FOR UP TO 32 DRUMS OR 8 IBCS.



Fire-rated storage container with shelving RFP is the best option when larger quantities of hazardous substances or larger containers need to be accommodated. Thanks to an integrated heavy-duty rack with adjustable storage levels, optimum use can be made of the interior space, storing hazardous materials individually, in boxes, on pallets or on special carrier frames. The 2-wing doors allow generous, convenient access and facilitate loading and unloading. The integrated roof drainage system drains rainwater via the short sides of the room system.



- ETA approval / CE marking according to European Regulation (EU) No. 305/2011.
- Tested and approved as a complete system with 90 minute fire protection (F 90 / REI 90) from inside and outside.
- International designs meeting country-specific legislation (REI 120, REI 60).

PRODUCT DESCRIPTION.

- Best option when larger quantities of hazardous materials need to be stored in a separate fire compartment and no safety clearances to avoid exposure to fire on both sides can be maintained.
- For the storage, dispensing or removal of flammable and water-polluting substances.
- Install directly next to the external wall of neighbouring buildings or as a fire-rated separate area, e.g. in a production hall. Exception: peroxide stores, [FROM P. 60](#).
- On request available with variable shelf heights.
- Water law tested, one-piece, hot-dip galvanised 5 mm spill pallet in the lower storage level.
- Storage levels fitted with removable, hot-dip galvanised grids (**max. load capacity 1250 kg/m²**).
- Long-lasting corrosion protection with fully-galvanised base material and high-quality 2K paint (**RAL 9002, grey-white**).
- Fire protection panels with high insulation properties (thickness 100 mm, A class material, non-combustible).
- Lockable, self-closing EI₂ 90-C wing doors on the long side meeting EN 13501-2, tested to EN 1634-1 or country-specific design with a door opening angle of 90 ° / 102 ° / 115 ° / 128 °.
- Versions which are accessible underneath are installed on a separately-supplied concrete pad. This means they can easily be loaded with a high-lift truck, for example. For the wide version (RFP 615.20 and .30), the store has two concrete pads of the same size.

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines** [SEE P. 11](#).



MODEL	RFP 315.20	RFP 315.30	RFP 615.20	RFP 615.30
Storage capacity IBC / CP / EP / Drum	2 / 2 / 3 / 8	4 / 4 / 6 / 16	4 / 4 / 6 / 16	8 / 8 / 12 / 32
Containment volume (l)	1,150	1,150	2,300	2,300
External dimensions* W x D x H [mm]	3,660 x 1,784 x 2,630	3,660 x 1,784 x 3,575	6,882 x 1,784 x 2,649	6,882 x 1,784 x 3,594
Compartment dimensions W x D x H [mm]	2,917 x 1,440 x 1,954	2,700 x 1,440 x 1,331	2,917 x 1,440 x 1,954	2,700 x 1,440 x 1,331
Upper compartment W x D x H [mm]	-	2,700 x 1,235 x 1,392	-	2,700 x 1,235 x 1,392
Weight [kg]	2,420	2,980	4,360	5,370

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585 \text{ kN/m}^2$ and a ground snow load $s_k = 2.5 \text{ kN/m}^2$. The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004. Available with additional equipment for up to wind load zone 4, terrain category I ($q_{k,w} = 1.064 \text{ kN/m}^2$) and for up to ground snow load $s_k = 5.86 \text{ kN/m}^2$.

EQUIPMENT OPTIONS.

Whether you need access underneath or fire bulkheads for cable systems and pipes - equipment plays a decisive role in the individual product configuration. Our experts will discuss your requirements with you on site and develop a custom-fit solution. **An overview of additional equipment options can be found here** [FROM P. 64](#)



Versions which are accessible underneath are installed on a separately-supplied concrete pad.



Cable box (fire bulkhead) for the passage of cables through the wall of the fire-rated store, while maintaining the fire resistance of the component.



FIRE-RATED STORAGE CONTAINER RFP SD.

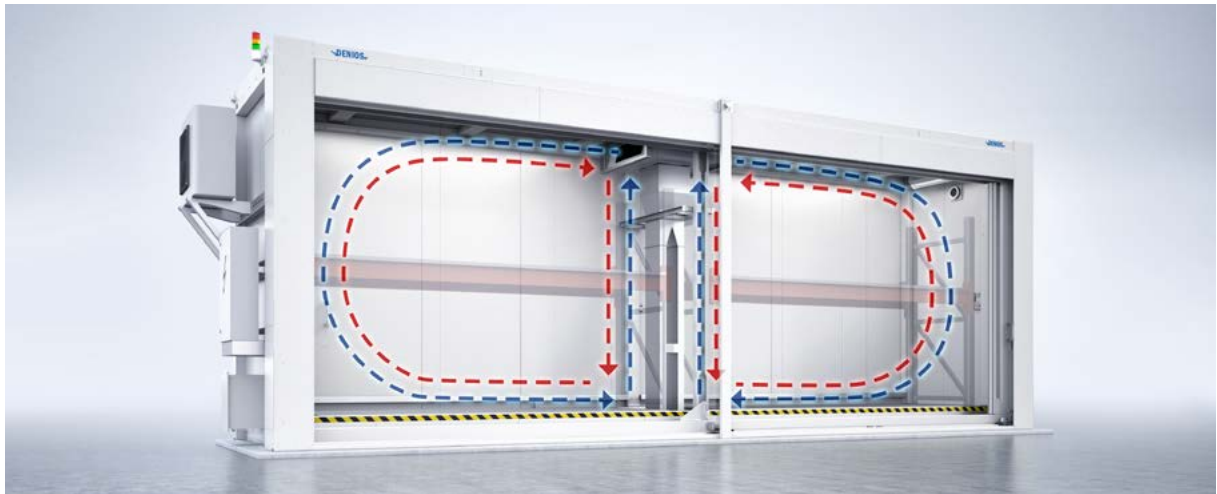
No fire-rated store offers more storage capacity for large containers than RFP SD with large, practical sliding doors. Flammable media can be stored, even indoors.

The product illustrations show optional equipment. We would be happy to create a custom product configuration for you.



FIRE-RATED STORAGE CONTAINER RFP SD.

STORAGE CAPACITY FOR UP TO 48 DRUMS OR 12 IBCS.



Fire-rated storage container RFP SD with sliding doors offers fire protection for large quantities of hazardous substances, stored in drums or IBCs. The larger size of the sliding doors gives you up to 50 % more storage capacity than the wing door variant. In addition, the door opening radius is eliminated, which extends the working area in front of the room system. When installed outdoors, there is therefore no risk of the doors slamming shut unintentionally due to wind loads. In the version with electric sliding doors RFP SD-ED, the doors can be easily opened and closed by remote control from the forklift.



- ETA approval / CE marking according to European Regulation (EU) No. 305/2011.
- Tested and approved as a complete system with 120 minute fire protection (F 120 / REI 120) from inside and outside.

PRODUCT DESCRIPTION.

- Best option when larger quantities of hazardous materials need to be stored in a separate fire compartment and no clearance is available.
- The larger sliding doors offer up to 50 % more storage capacity.
- An open sliding door gives easier access to the fire-rated storage container with shelving than a wing door and improves logistical efficiency; when installed outdoors, there is no risk of the doors slamming shut unintentionally due to wind loads.
- The manually or electrically operated fire-rated doors, tested according to EN 16034, close automatically when the fire detectors are triggered
- Install directly next to the external wall of neighbouring buildings or as a fire-rated separate area, e.g. in a production hall. Exception: peroxide stores, [FROM P. 60](#).
- On request available with variable shelf heights.
- Water law tested, two piece, hot dip galvanised 5 mm spill pallet in the lower storage level, with removable grids (**max. load capacity: 1250 kg/m²**).
- Long-lasting corrosion protection with fully-galvanised base material and high-quality 2K paint (**RAL 9002, grey-white**).
- Fire protection panels with high insulation properties (thickness 100 mm, A class material, non-combustible).

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines** [SEE P. 11](#).



MODEL	RFP 815.30 SD
Storage capacity IBC / CP / EP / Drum	12 / 12 / 16 / 48
Containment volume (l)	2 x 1,600
External dimensions* W x D x H [mm]	9,410 x 2,238 x 3,594
Compartment dimensions W x D x H [mm]	4,000 x 1,440 x 2,800 without shelf 3,900 x 1,440 x 1,300 with shelf (lower compartment) 3,900 x 1,300 x 1,300 with shelf (upper compartment)
Weight [kg]	7,780

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585 \text{ kN/m}^2$ and a ground snow load $s_k = 2.5 \text{ kN/m}^2$. The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004. Available with additional equipment for up to wind load zone 4, terrain category I ($q_{k,w} = 1.064 \text{ kN/m}^2$) and for up to ground snow load $s_k = 5.86 \text{ kN/m}^2$.

ROOF DRAINAGE.

The roof drainage counteracts loads from standing water on the roof. The rainwater is directed via the roof profile to the two short sides of the room and is channeled to an outlet either through the right or left corner profile or through both. From there, it can be directed to a drainage system on site, e.g. via a drainage pipe.

EQUIPMENT OPTIONS.

With fire-rated stores, safety is of prime importance. Add electric sliding doors with remote control, optional video surveillance or an aerosol extinguishing system to increase safety. Our experts will discuss your requirements with you on site and develop a custom-fit solution.

An overview of additional equipment options can be found here [FROM P. 64.](#)



The electric sliding doors of the RFP SD-ED can be easily opened and closed from the forklift, saving time, with a practical remote control unit.



The aerosol extinguishing system is triggered by temperature and effectively interrupts the chemical combustion process within 4.5 - 15 seconds (depending on model).

STORAGE OF LITHIUM ENERGY STORAGE DEVICES.



The hazard potential when incorrectly handling lithium energy storage devices is very high. Deep discharge, fire, chemical reactions, explosion of the batteries in the worst-case scenario – each individual situation means a risk for workers and the environment. And this may result in considerable financial losses and production downtime. Organisational and structural protective measures help to limit the hazard potential at an early stage. Technical room systems from DENIOS offer the right equipment you need for the safe storage of lithium energy storage devices and will withstand the enormous fire load should the worst happen.

THE WALK-IN STORAGE SOLUTION WFP LI-ION.

- Storage area approx. 7-22 m².
- Manual storage for smaller module sizes that do not require a forklift.
- Safe parking of larger battery-powered devices or an electric vehicle (e.g. prototype and test equipment).
- Easy battery charging.
- Temporary storage for shipping or for faulty batteries.



"STORING AND TESTING LITHIUM BATTERIES SAFELY" BROCHURE

Comprehensive expertise as well as additional information on our products, numerous equipment options and our service offering can be found in our "Storing and testing lithium energy storage devices safely" brochure.

Request yours now: +49 5731 753 455 | or order online:



THE SPACIOUS SHELVING SOLUTION RFP LI-ION.

- Storage capacity: for up to 24 Euro pallets.
- Storage of larger quantities or larger sized lithium energy storage devices.
- Integrated heavy duty shelving with adjustable storage levels.
- Hot dip galvanised, removable grids enable storage, e.g. in boxes / cartons, on pallets or on special carrier frames.



THE COMPACT STORAGE SOLUTION RFP 115 LI-ION.

- Space-saving solution for the storage of lithium energy storage devices.
- Increased safety and comfort.
- If desired, available with a variable number of shelves – for optimum use of the inner space.



MAXIMUM STORAGE CAPACITY IN RFP SD LI-ION.

- Storage capacity: for up to 32 Euro pallets.
- Up to 50 % more storage capacity and unrestricted working area with sliding doors.
- Fire protection for a large number of lithium energy storage devices.
- The manually or electrically operated fire-rated doors close automatically when the fire detectors are triggered.



"TIPS FOR HANDLING LITHIUM ENERGY STORAGE DEVICES" GUIDE.



Have you seen it? Our online guide has heaps of practical tips and basic information for handling lithium energy storage devices.

STORAGE OF ORGANIC PEROXIDES.

RISKS UNDER CONTROL.



Organic peroxides are unstable, temperature sensitive, oxidising and sometimes potentially explosive compounds. Pure peroxides are used in industry, or they are mixed with additives or auxiliary materials. When storing these chemicals, the most stringent safety precautions must be taken and numerous requirements from the authorities must be met. DENIOS peroxide stores have ETA approval, F 90 approval from Deutsches Institut für Bautechnik (DIBt) or REI 90 classification from IBS, an REI 120 classification from Efectis France or an expert opinion from Bundesanstalt für Materialforschung und -prüfung (BAM).

EQUIPMENT FOR PEROXIDE STORES.

Our fire-rated stores essentially consist of a sturdy, corrosion-resistant steel frame, a fire-resistant shell (F 90 / REI 90 / REI 120) and of course, fire-rated doors. If you need to meet stricter safety standards for a peroxide store, the equipment can be complemented with the following components:

- Heating and cooling technology (redundant also available).
- Fire extinguishing technology.
- Temperature monitoring.
- Alarm systems (visual and audible).
- Gas warning detectors.
- Stainless steel inlay spill pallet or PE inliners.



SPECIAL REQUIREMENTS, MET PERFECTLY.

Organic peroxides pose a high risk of danger because they decompose under the influence of temperature or the effects of a catalyst. In order to minimise the risk when storing organic peroxides, a number of guidelines have to be observed when building peroxide storage facilities, such as the Trade association guidelines for organic peroxides (DGUV regulation 13) in Germany or the VKF fire protection directive "Hazardous substances 26-15" in Switzerland. DENIOS offers fire-rated storage containers as specially equipped peroxide stores that meet these special legal requirements.



STORED AMOUNT [KG]	< 100	100	200	1,000	2,000	5,000
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Safety distance [m] for storing organic peroxides

OP Ia (A-300)	0	25	25	25	25	27
OP Ib	0	0	25	25	25	30
OP II	0	0	25	25	25	25
OP III	0	0	10	10	10	10
OP IV	0	0	0	0	0	0

MINIMISED SAFETY DISTANCE.

Buildings and outdoor installations where organic peroxides are handled must be separated from other buildings or installations depending on the hazard group and quantity of organic peroxides stored, as well as the location, arrangement and type of construction of the buildings and installations. By taking special safety measures such as fire protection, extinguishing or fire alarm technology, the requirement for safety distances may be partially or fully lifted in consultation with the approval authorities. The F 90 / REI 90 / REI 120 versions of our fire-rated stores allow safety distances to be significantly reduced under certain circumstances.

TEMPERATURE UNDER CONTROL.

The SADT (self-accelerating decomposition temperature) is the temperature above which there is a risk of the peroxide undergoing self accelerating decomposition. The temperature of the stored goods must be a minimum of 10 °C below the SADT. In order to guarantee the quality requirements and safety criteria for a constant temperature range for peroxide storage, good thermal insulation is also required alongside fire protection. Our peroxide stores guarantee excellent thermal insulation with mineral wool panels (construction material class A). Integrated climate control/cooling equipment reliably ensures the required temperature range is observed.

EXPLOSION PROTECTION.

Technical ventilation prevents the accumulation of potentially explosive air/gas mixtures within room systems. The electrical installations are also explosion-proof in order to avoid effective ignition sources. Storage rooms for organic peroxides in hazard groups OP I to OP II must also be provided with pressure relief panels. Guideline values are to be used for the required total pressure relief panel area. This kind of pressure relief device is installed in the roof of your store. The panel is designed so that when a previously determined pressure is reached, it opens automatically. It will close again automatically when the pressure wave has been dissipated to seal the store. Fire protection properties are retained. This has been successfully demonstrated in a 120 minute long fire test.





INDIVIDUAL SOLUTIONS FOR HAZARDOUS MATERIALS STORES.

**BENEFIT FROM OUTSTANDING ADVICE, INDIVIDUAL PLANNING AND HOLISTIC SOLUTIONS
DIRECTLY FROM THE MANUFACTURER.**

DENIOS systems have proven themselves worldwide in many sectors and numerous applications. Our range of standard solutions has continually developed and offers outstanding flexibility for individual applications. DENIOS also has extensive experience in the planning and implementation of individual stores for hazardous material storage.

SOLUTIONS, MADE JUST FOR YOU.

Adapted to your available space, your production conditions: we use an individual solution where our standard range of services does not cover your requirements. This allows you to optimally integrate your hazardous materials store into your production environment without compromise.

When analysing your needs, we first record your circumstances and ideas. This dialogue between you and our experts is critical for a custom-made solution: it allows us to create a sensible, economical design for your hazardous materials store. You'll only receive the services you need from us. In our experience, perfect integration works best when one central contact is responsible, from the needs analysis to the implementation and commissioning of the custom hazardous materials store. This prevents information being lost where interfaces occur. DENIOS is a single source, offering all the services needed for your made-to-measure solution.

Your individual solution will be planned, designed and produced for you in-house in accordance with the **full service principle**. As a supplier and manufacturer we have all the required expertise in-house. Our aim is the precise implementation of your project, on-time, ensured by our specialist staff. We will of course visit you in person for the needs analysis. Your personal project engineer will be available throughout the implementation phase, ready to give you up to date information on the current state of the project. Our door is always open. You may monitor the progress of the project and production in person at any time. Our service department will carry out all the logistics and install the system for you. The commissioning and handover of your hazardous materials store, including training, successfully completes the project. You will then receive comprehensive project documentation. Even when your equipment is up and running you can still rely on us. Our customer service makes sure that your investment retains its worth: with a service and maintenance plan which is tailored to you and your product, we guarantee a high quality, long lasting solution.



With a holistic view of your individual requirements and with sufficient resources, we make sure your project goes smoothly.



Even after successful completion of the project and handover of the keys, we will continue to support you with our comprehensive range of services.

INSPIRING PROJECTS.

On our website we have examples of individual custom-made products. We can also integrate plant components for you, such as airlock technology or pollutant detection systems. Be inspired by the projects we have completed over the last few years. DENIOS engineers will find a safe and economical solution for every requirement.

HAZARDOUS MATERIALS STORES FROM DENIOS.

CUSTOMISED SOLUTIONS.

SECTION II

WITHOUT FIRE PROTECTION.

Hazardous materials stores without fire protection offer plenty of space for water-polluting and flammable substances in various container sizes. They can be equipped with thermal insulation and air conditioning technology so that temperature-sensitive hazardous materials can be stored frost-free. Choose your model from the functional and internationally proven standard programme or let us develop an individual solution with you, tailored to your needs.

HAZARDOUS MATERIALS STORES WITHOUT FIRE PROTECTION.

SC.

- STORAGE CONTAINERS WITH SHELVING FOR IBCS AND 205 LITRE DRUMS
- PERFECT FIT WITH A WIDE RANGE OF VARIANTS

➞ FROM P. 44



SOLIDMAXX.

- COMPACT STORE FOR INSTALLATION NEAR PRODUCTION
- STORAGE CAPACITY:
FOR UP TO 8 DRUMS OR 2 IBCS

➞ FROM P. 50



MCV.

- WALK-IN HAZARDOUS MATERIALS STORE WITH MULTIPLE EQUIPMENT OPTIONS
- STORAGE CAPACITY:
APPROX. 5–17 m²

➞ FROM P. 54



WHG.

- WALK-IN HAZARDOUS MATERIALS STORE FOR SMALL CONTAINERS AND INDIVIDUAL DRUMS
- STORAGE CAPACITY:
APPROX. 2–15 m²

➞ FROM P. 60



STORE TEMPERATURE-SENSITIVE HAZARDOUS SUBSTANCES SAFELY.

Insulated hazardous material stores make the ideal choice for the frost-free storage of temperature-sensitive hazardous substances. The proven steel frame construction is covered with special energy-saving panels for this purpose: The thermal insulation made of A or B class material effectively protects against energy loss and the effects of frost. Non-combustible A class material is suitable for the storage of flammable liquids. Reliable air conditioning technology protects heat or frost-sensitive stored goods. The systems can be fitted with better heating, cooling equipment or air conditioning systems if required.

HEATING.

Finned tube heaters ensure optimum heating output and distribution. Available as Ex and nEx versions, each with an output of 1 or 2 kW. In contrast, fan heaters ensure active and targeted convection. The effective heating produced (nEx = 5 kW, Ex = 6 kW) is higher than for heating media with a natural heat flow. Fan heaters are therefore the ideal choice for larger, walk-in hazardous materials stores with insulation. They also have a recirculating function ensuring a uniform temperature distribution in the store.



AIR CONDITIONING.

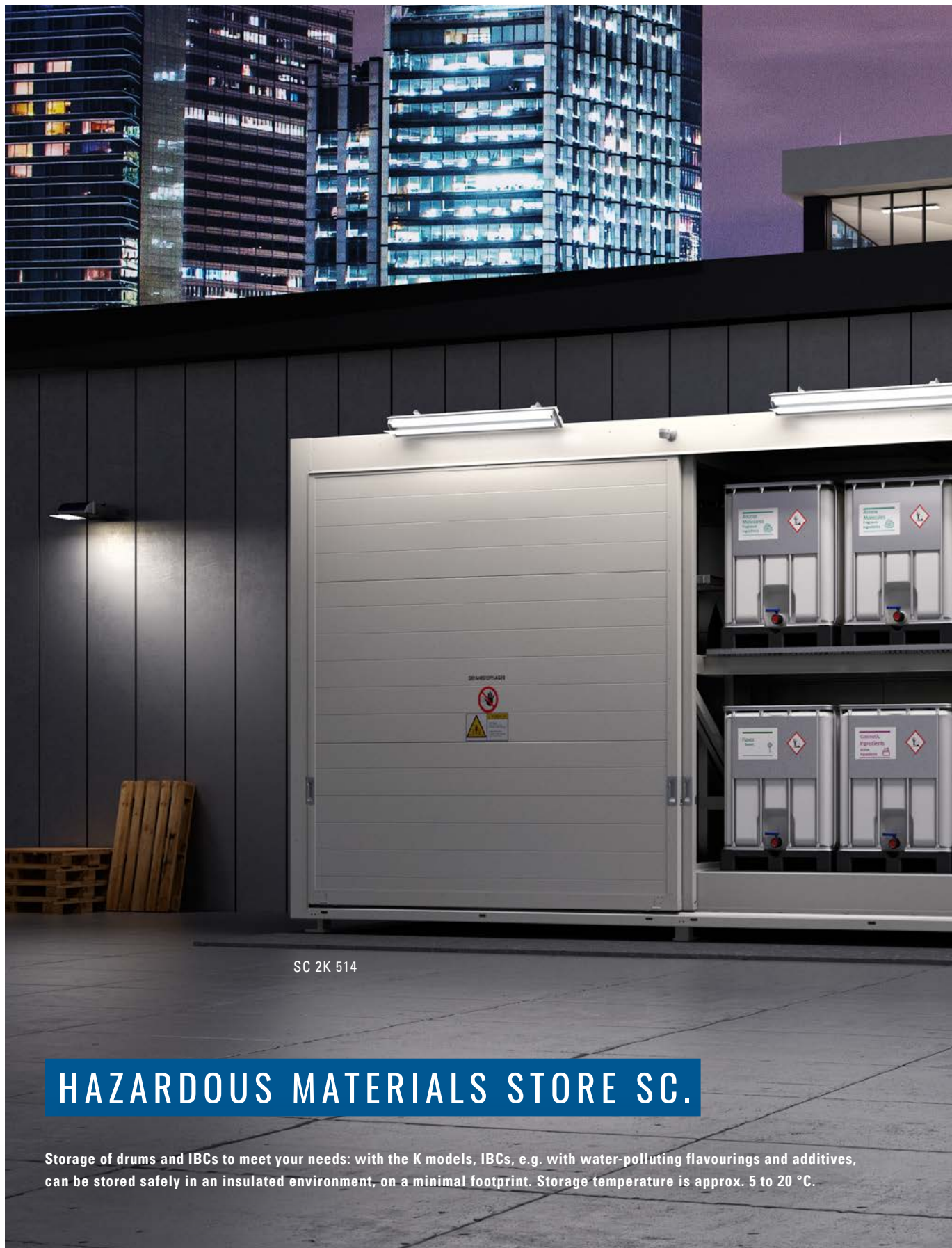
In the standard versions of our hazardous materials stores, air conditioning systems and units ensure an optimum climate as well as frost-free conditions inside. The temperature range in the store is between +5 °C at an external temperature down to -15 °C and +25 °C at an external temperature up to +35 °C. Modular cooling and air conditioning solutions enable precision temperature control of the storage room. Ex designs are also available.



VENTILATION.

To ensure permanent air extraction from your hazardous materials store, a high performance technical ventilation system is fitted, in accordance with local legal requirements. It also prevents the formation of gases that are hazardous to health or even explosive. The air flow is monitored in accordance with the law by an airflow monitor. If required, we can fit additional technical ventilation, which switches on automatically in the event that the air extraction limits are exceeded.





SC 2K 514

HAZARDOUS MATERIALS STORE SC.

Storage of drums and IBCs to meet your needs: with the K models, IBCs, e.g. with water-polluting flavourings and additives, can be stored safely in an insulated environment, on a minimal footprint. Storage temperature is approx. 5 to 20 °C.

The product illustrations show optional equipment. We would be happy to create a custom product configuration for you.



SC-P



SC-H



SC-M



HAZARDOUS MATERIALS STORE SC-K.

STORAGE CAPACITY FOR UP TO 18 IBCS OR 60 DRUMS.



Hazmat storage container with shelving SC is the most flexible room system from DENIOS. Four different versions (K, P, H, M) are optimised to suit typical types of large containers: drums or IBCs with/without pallets or mixed storage. The containers can be stored on top of each other on up to three levels. Each version has insulated variants and an extra deep version available. Your hazardous materials store can be adapted to your individual needs. Investment costs and space requirements are therefore reduced. The design of the SC is legally compliant and optimally aligned with your protection concept: with an integral type-approved spill pallet for containing leaked liquids and structural protection against the effects of the weather if located outside.




- With General Technical Approval valid throughout Germany from the Deutsches Institut für Bautechnik (DIBt) for the storage of liquids in all water hazard classes.
- Compliance with DIN EN 1090 for manufacturers of load-bearing structures in steel.

PRODUCT DESCRIPTION.

- For the storage of large quantities of hazardous substances in IBCs.
- Version for temperature-sensitive materials with thermal insulation in 60 mm class A material (class B material also available for SC 2K 415 + SC 2K 715).
- Water-law tested, fully galvanised 3 mm spill pallet(s) in the lower storage level.
- Storage levels fitted with removable, hot-dip galvanised grids (**max. load capacity 1250 kg/m²**).
- 110 mm clearance for access underneath using a hand operated electric stacker.
- Long-lasting corrosion protection with fully-galvanised base material and high-quality 2K paint (**RAL 9002, grey-white or RAL 5010, gentian blue**).
- Sliding doors in modern sectional design.
- Security lock for protection against unauthorised access.
- Precise roof drainage.
- European product concept: higher availability and a uniform product and service offering for internationally operating customers; country-specific legislation is taken into account.

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines**  **SEE P. 11.**



MODEL	SC 2K 215	SC 1K 415	SC 2K 415	SC 1K 515	SC 2K 515	SC 1K 715	SC 2K 715	SC 3K 715 **
Storage capacity IBC / CP / EP / Drum	4 / 4 / 6 / 16	3 / 2 / 4 / 10	6 / 4 / 8 / 20	4 / 4 / 6 / 16	8 / 8 / 12 / 32	6 / 4 / 8 / 20	12 / 8 / 16 / 40	18 / 12 / 24 / 60
Containment volume [l]	1,000	1,000	1,000	2 x 1,000	2 x 1,000	2 x 1,000	2 x 1,000	2 x 1,000
External dimensions* W x D x H [mm]	3,083 x 1,635 x 3,697	3,763 x 1,635 x 3,383	3,763 x 1,635 x 3,697	5,903 x 1,733 x 3,383	5,903 x 1,733 x 3,697	7,263 x 1,733 x 3,383	7,263 x 1,733 x 3,697	7,263 x 1,733 x 5,200
Dimensions per compartment W x D x H [mm]	2,700 x 1,330 x 1,350	3,380 x 1,330 x 2,570	3,380 x 1,330 x 1,350	2,700 x 1,330 x 2,570	2,700 x 1,330 x 1,350	3,380 x 1,330 x 2,570	3,380 x 1,330 x 1,350	3,380 x 1,330 x 1,350
Weight* [kg]	1,200	1,150	1,400	1,950	2,400	2,200	2,750	4,500

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments. ** Split delivery and assembly required.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585 \text{ kN/m}^2$ and a ground snow load $s_k = 2.5 \text{ kN/m}^2$. The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004.

ROOF DRAINAGE.

The roof drainage counteracts loads from standing water on the roof. In the insulated version, the rainwater is directed via the roof profile to the two short sides of the room and drained off via the rear.

EQUIPMENT OPTIONS.

Equipment plays a decisive role in the individual product configuration. We will be happy to discuss with you whether you need a motion sensor or a signal lamp. Our experts will design a customised solution with you on site.

An overview of additional equipment options can be found here [FROM P. 64.](#)



External lighting with motion sensor.

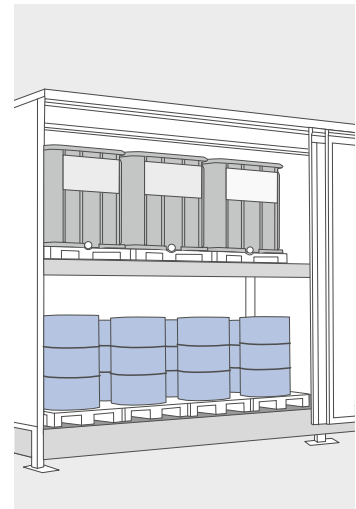
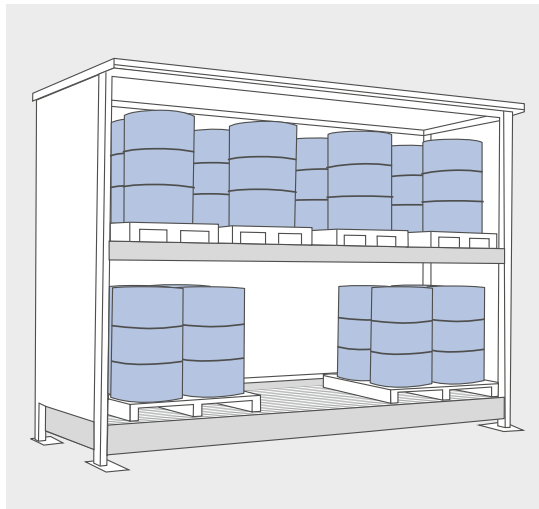


Signal lamp for visual indication of an alarm.

VARIANTS FOR HAZARDOUS MATERIALS STORE SC.

VERSIONS P AND H.

Hazmat storage container with shelving SC Version P is ideal for the storage of drums on pallets. Up to three storage levels give a maximum storage capacity of 72 drums on 24 Euro pallets or 18 chemical pallets. The convenient compartment dimensions of the H series allow mixed storage of drums and IBCs on pallets with a maximum load capacity of 1250 kg/m². Insulated versions are also available (material thickness 50 mm, class A/B material). The maximum loads are 1250 kg/m² for the two SC 2P sizes and 1000 kg/m² for the SC 3P 814.



MODEL	SC 2P 414	SC 2P 814	SC 3P 814**	SC 2H 814
Storage capacity IBC / CP / EP / Drum	0 / 6 / 8 / 24	0 / 12 / 16 / 48	0 / 18 / 24 / 72	12 / 12 / 16 / 48
Containment volume [l]	1,100	2,100	2,100	2,100
External dimensions* W x D x H [mm]	4,138 x 1,607 x 3,139	8,152 x 1,694 x 3,142	8,152 x 1,694 x 4,573	8,152 x 1,694 x 3,663
Dimensions per compartment W x D x H [mm]	3,900 x 1,340 x 1,250	3,900 x 1,340 x 1,250	3,900 x 1,340 x 1,250	3,900 x 1,310 x 1,500
Weight* [kg]	1,310	2,570	5,430	3,050

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments. ** Split delivery and assembly required.

DENIOS GUIDE TO THE COMBINED STORAGE OF HAZARDOUS SUBSTANCES.



Hazardous substances are classified into storage classes. This also determines which substances you may store together. The DENIOS guide "Combined storage of hazardous substances in accordance with TRGS 510" answers your most important questions.

VERSION M.

Extra-high, extra-deep - the hazmat storage container with shelving in the M version offers more capacity and individual adaptability. For example, insulated versions for frost-free storage are available (SC 1 M: 50 mm A/B class material, SC 3 M 815: special version with 100 mm A class material). If the applicable safety distances and technical regulations are observed, flammable substances as well as water-polluting substances can be stored in the M series models.



MODEL	SC 3 M 815**	SC 1 M 426	SC 1 M 826
Storage capacity IBC / CP / EP / Drum	18 / 12 / 24 / 60	6 / 6 / 8 / 24	12 / 12 / 16 / 48
Containment volume [l]	2 x 1,000	2,050	3,790
External dimensions* W x D x H [mm]	7,999 x 1,880 x 5,776	4,040 x 2,880 x 3,685	8,040 x 2,880 x 3,685
Dimensions per compartment W x D x H [mm]	3,600 x 1,330 x 1,600	3,900 x 2,540 x 3,340	3,900 x 2,540 x 3,340
Weight* [kg]	6,720	2,200	4,200

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Attachments. ** Split delivery and assembly required.

HORIZONTAL DRUM STORAGE.



Advantage of horizontal storage: each drum is accessible to the user for dispensing at any time. Support rails in the storage areas ensure this convenience. The drums can be pulled out and turned with the help of roller supports. In the extra-deep version, you can even enter the storage room through a side door and conveniently dispense the stored substances from there.

FROM P. 76.



SolidMaxx CH 2.1

COMPACT HAZARDOUS MATERIALS STORE SOLIDMAXX.

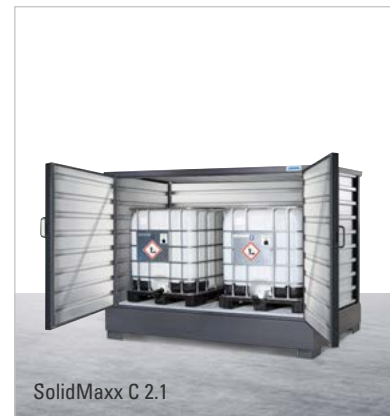
The compact SolidMaxx hazardous materials store is the ideal solution where space is limited. It is suitable for storing hazardous substances close to production, for example cleaning agents for dispensing. If there is no heating at the site, choose a version with thermal insulation and heating.



SolidMaxx C 1.1



SolidMaxx CH 1.1



SolidMaxx C 2.1

COMPACT HAZARDOUS MATERIALS STORE SOLIDMAXX.

STORAGE CAPACITY FOR UP TO 8 DRUMS OR 2 IBCS.



The compact SolidMaxx hazardous materials store has a sturdy design and uses the storage capacity available on a small footprint to best advantage. In the stable, corrosion-protected steel design with integral spill pallet, you can store up to eight 205 litre drums on Euro/chemical pallets or directly on grids. Alternatively, the hazardous materials store offers space for up to two IBCs. In addition, it is accessible underneath and can therefore be easily loaded with a high-lift truck or forklift. In the high version (CH) the room system can be used as a dispensing station.




- With General Technical Approval valid throughout Germany from the Deutsches Institut für Bautechnik (DIBt) for the storage of liquids in all water hazard classes.
- Compliance with DIN EN 1090 for manufacturers of load-bearing structures made of steel.

PRODUCT DESCRIPTION.

- For the storage of drums and IBCs on a small footprint for access close to production.
- Approved for storage of water-polluting and flammable substances.
- Steel frames and spill pallet are powder coated (**RAL 7043, black-grey**). The wall elements are made of galvanised profile sheet metal or, in the thermally insulated version, of painted smooth sheet metal panels (**RAL 9002, grey-white**).
- On request with thermal insulation for walls (40 mm) and roof (50 mm) in mineral wool (ISO A - non-combustible) and heating for frost-free storage.
- Water law tested, one piece 5 mm spill pallet (to density 1.9 g/cm³) with easily removable hot dip galvanised grids (**max. load capacity: 2000 or 4000 kg**).
- When a PE inliner is fitted: galvanised fluid guides all around ensure any leaked substances are safely diverted to the spill pallet.
- Door equipment: 1-wing in narrow version or 2-wing in wide version.
- 100 mm clearance for access underneath using a hand operated electric stacker.
- Natural ventilation provided by weather-protected, all round openings.
- Security lock for protection against unauthorised access.
- Precise roof drainage via the rear.
- Crane eyes as standard for safe transport to the installation site.

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines**  **SEE P. 11.**



MODEL	SOLIDMAXX C 1.1	SOLIDMAXX C 2.1	SOLIDMAXX CH 1.1	SOLIDMAXX CH 2.1
Storage capacity IBC / CP / EP / Drum	1 / 1 / 1 / 4	2 / 2 / 3 / 8	1 / 1 / 1 / 4	2 / 2 / 3 / 8
Containment volume [l]	1,000	1,000	1,000	1,000
External dimensions* W x D x H [mm]	1,710 x 1,570 x 2,360	2,900 x 1,570 x 2,060	1,725 x 1,865 x 2,570	2,990 x 1,865 x 2,360
Internal dimensions W x D x H [mm]	1,350 x 1,330 x 1,390	2,540 x 1,330 x 1,390	1,400 x 1,630 x 1,765	2,665 x 1,630 x 1,770
Weight* [kg]	570	810	610	910

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585 \text{ kN/m}^2$ and a ground snow load $s_k = 2.5 \text{ kN/m}^2$. The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004.

DOOR DESIGNS.

- 1-wing for SolidMaxx C / CH 1.1.
- 2-wing for SolidMaxx C / CH 2.1.
- Internal door hook.
- Security lock for protection against unauthorised access.

EQUIPMENT OPTIONS.

If you choose the SolidMaxx hazardous materials store, a drum pump or a convenient step provide even more safety and additional comfort. We will be happy to discuss your individual requirements in a personal consultation. Our experts will design a customised solution with you on site. **An overview of additional equipment options can be found here** [🔗 FROM P. 64.](#)



Drum pump for pumping flammable liquids.



The 1-tread step allows you to easily reach the upper part of a container, for example to use a drum pump.



MCV 6330

WALK-IN HAZARDOUS MATERIALS STORE MCV.

Use walk-in hazardous materials store MCV to store water-based paints in small containers and drums for example, as well as fill them or dispense from them. As these substances are temperature-sensitive, the store is also equipped with thermal insulation and heating.

The product illustrations show optional equipment. We would be happy to create a custom product configuration for you.



MCV 2520



MCV 4320



MCV 4330



WALK-IN HAZARDOUS MATERIALS STORE MCV.

STORAGE AREA APPROX. 5-17 M².



The walk-in hazardous materials store MCV has improved comfort and flexibility. It is available in various dimensions as well as an insulated version. But it offers even more: thanks to galvanised components, long-lasting corrosion protection is ensured. The modern flat sheet design* is galvanised and painted in RAL 5010 (gentian blue). The doors can be positioned either in the long or short side of the room system. Various sizes of container can be stored, from small containers up to 205 litre drums. The inner room can be optimised with flexible shelving systems.

*In the non-insulated version the roof is in profile sheet.



- With General Technical Approval valid throughout Germany from the Deutsches Institut für Bautechnik (DIBt) for the storage of liquids in all water hazard classes.
- Compliance with DIN EN 1090 for manufacturers of load-bearing structures made of steel.

PRODUCT DESCRIPTION.

- Approved for storage of water-polluting and flammable substances.
- Enclosed construction with walls and roof in corrosion resistant galvanised and painted sheets (**RAL 5010, gentian blue**).
- On request with thermal insulation for walls (40 mm) and roof (50 mm) in mineral wool (ISO A - non-combustible) and heating for frost-free storage.
- Water law tested, one piece 5 mm spill pallet with easily removable hot dip galvanised grids
(**max. load capacity: 1000 kg/m²**).
- Low entry height of 150 mm.
- With 2-wing door (W x H: 2,000 x 2,000 mm), either on the short or long side of the room system in the steps provided.
MCV 2520 only available with 2-wing door on the long side.
- Delivered ready assembled.
- Crane eyes as standard for safe transport to the installation site.
- Natural ventilation available on request.

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines** [SEE P. 11.](#)



MODEL	MCV 2520	MCV 4320	MCV 4330	MCV 6330
Storage area (m ²)	5	10	12	17
Containment volume (l)	614	1,145	1,393	2,039
External dimensions* W x D x H [mm]	2,444 x 2,375 x 2,365	4,500 x 2,444 x 2,365	4,500 x 2,944 x 2,365	6,500 x 2,944 x 2,365
Internal dimensions W x D x H [mm]	2,240 x 2,240 x 2,100	4,240 x 2,240 x 2,100	4,240 x 2,740 x 2,100	6,240 x 2,740 x 2,100
Weight* [kg]	850	1,700	1,740	2,310

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585 \text{ kN/m}^2$ and a ground snow load $s_k = 2.5 \text{ kN/m}^2$. The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004.

SHELVING.

Optionally available shelves can be used to create order for small containers in your hazardous materials store. The shelves can be stacked. They have three levels (grids) and are available in two sizes:

- 1,000 x 500 mm (W x D, shelf load: 75 kg*, bay load: 225 kg).
- 2,000 x 500 mm (W x D, shelf load: 120 kg*, bay load: 360 kg).

*Shelf loads are with an evenly distributed load.

EQUIPMENT OPTIONS.

Whether you need a heating system or you store so many different substances that a clearly laid out information board makes sense, we will clarify this together with you in a personal consultation. Our experts will design a customised solution with you on site. **An overview of additional equipment options can be found here [FROM P. 64](#).**



The 5 kW heating system in nEx design, in combination with the thermal insulation, ensures an internal temperature of + 5 °C for an external temperature of -15 °C.



Infoboard for the clear presentation of information and work safety instructions.



GOOD PLANNING IS EVERYTHING.

SELECTING AND COMMISSIONING A HAZARDOUS MATERIALS STORE.
EXPLAINED BY THOMAS SCHMID, DENIOS AG, SALES ENGINEERED SOLUTIONS.*

Hazardous materials stores offer safe storage of hazardous substances in various container sizes. However, many things can go wrong when planning a hazardous materials store, which can affect safety and incur high costs.

MR. SCHMID, WHAT MUST THE OPERATOR CONSIDER IN ADVANCE WHEN PLANNING A HAZARDOUS MATERIALS STORE?

When introducing a (fire-rated) hazardous materials store, it is advisable to involve all relevant persons and departments in the company at an early stage, e.g. the work safety specialist, environmental protection and fire protection officers. The authorities also need to be contacted (e.g. District Office/Regional council, who will usually inform the Trade Inspectorate and relevant lower water authority etc.). In addition the property insurer and the fire brigade (for preventive fire protection) will also need to be contacted.

The basis for planning is primarily the substance list (substances, quantities, containers), a fire protection design and a risk assessment, which must be prepared by the store operator. Both must be based on the relevant regulations and technical rules (including the Regulation on equipment for handling water-polluting substances [AwSV] and the Technical rules for hazardous material storage TRGS 510).

In the context of building law, the installation situation must also be considered. Points such as fire brigade access, escape routes and planning permission are particularly important here.

You should never underestimate how important it is to have an adequate foundation with a horizontal, slope-free subsoil. If this is not provided, the hazardous materials store cannot be put into operation. I speak from experience here, because it has happened that customers have not thought about this, or simply did not know that this is needed for reasons of statics.

WHAT MUST AN OPERATOR CONSIDER WHEN SELECTING THE CONSTRUCTION TYPE OF A HAZARDOUS MATERIALS STORE?

A hazardous materials store is subject to water legislation, among other things. Suitability must be determined under the Water resources law (WHG). For storage systems, this is usually verified by a general technical approval (issued by DIBt, Berlin). When selecting a suitable room system, the DIBt and WHG approvals are therefore decisive. Customised room systems from DENIOS, for example, come with all the necessary certifications and approvals.

When storing flammable liquids and combustible hazardous substances, it is imperative to consider fire protection. This must be ensured by a fire-resistant system from the inside and outside in the case of indoor installation, and alternatively by safety distances in the case of outdoor installation. Especially when it comes to fire protection, the expertise of the store manufacturer is of paramount importance. It has been our experience at DENIOS that there is always a clear need for advice on the part of the customer. Accordingly, we support our customers with customised planning and a large selection of technical room systems and extensive equipment options, such as technical ventilation, air extraction monitoring, explosion protection and air conditioning, but also with a quality maintenance service. Of course, this is only possible if, you have more

than 35 years of experience as a specialist, as we do, and can offer a wide variety of customised systems for every need that meet international quality standards in all fire protection classes with a fire resistance of up to 120 minutes.

WHAT MUST BE TAKEN INTO ACCOUNT WHEN SUPPLYING AND OPERATING A HAZARDOUS MATERIALS STORE?

Commissioning as well as maintenance and servicing of a hazardous materials store should only be carried out by certified and approved technicians. This is often neglected in practice. For example, installing a system in a WHG area requires the expertise and certification of the installation team. This is because any anchor placed in a WHG area to secure a store will penetrate the coating or floor slab, potentially damaging the blocking effect of this barrier layer. That is why the guideline for concrete construction when handling substances hazardous to water (BUMwS) provides strict rules for a suitable fastening solution by specialist personnel. This is to ensure that no water-polluting medium contaminates the environment in the event of an accident. Here, for example, DENIOS offers a wide range of services and, as a certified WHG specialist company, takes on not only the transport but also the professional assembly and installation of the systems (specialist company obligation).

In addition, the aforementioned AwSV - depending on the hazard level - also imposes certain requirements on the operator. This provides, for example, for an inspection by an AwSV expert before commissioning.

Additional evidence must be provided for ongoing operation. This applies, for example, to the maintenance and servicing work that we at DENIOS always offer our customers. Then, as the operator, you can be sure that the work carried out complies, among other things, with the requirements of the German Industrial safety regulation (BetrSichV) and, for example, the StawaR - Steel spill pallet directive for spill pallets with a volume up to 1000 litres. For the operator, this means an extension of his warranty and additional safety.

In addition, there are of course other points to consider, e.g. for explosion-proof systems. All in all, I can only say: give sufficient thought to your planning in advance, and work with a supplier who is able to advise you on all matters and not only take care of delivery and assembly, but can also guarantee a comprehensive after-sales service.



WHG 360

WALK-IN HAZARDOUS MATERIALS STORE WHG.

The WHG walk-in hazardous materials store can be conveniently loaded due to its low entry height in combination with an access ramp. For example, it could be used as a workshop oil store for small containers and drums.

The product illustrations show optional equipment. We would be happy to create a custom product configuration for you.



WALK-IN HAZARDOUS MATERIALS STORE WHG.

STORAGE AREA APPROX. 2-15 M².



Hazardous materials store WHG is one of the most often purchased and proven DENIOS room systems for various sizes of container, from small containers to 205 litre drums. We have also placed great emphasis on user comfort in the entry-level model: the entry height is only 150 mm. The standard version of WHG is perfect for passive storage of water-polluting / flammable substances, if safety distances are observed. Flexible equipment options can be added at any time. We have fitted special accessories and ventilation systems for many projects.




- With general technical approval valid throughout Germany from the Deutsches Institut für Bautechnik (DIBt) [German institute of construction engineering], Berlin.
- Compliance with DIN EN 1090 for manufacturers of load-bearing structures made of steel.

PRODUCT DESCRIPTION.

- Approved for storage of water-polluting and flammable substances.
- Enclosed construction with walls and roof in corrosion resistant galvanised and painted profile sheets (**RAL 5010, gentian blue**).
- Water law tested, one piece 5 mm spill pallet with easily removable hot dip galvanised grids (**max. load capacity: 1000 kg/m²**).
- Low entry height of 150 mm.
- 2-wing door (with safety lock) on the long side of the room.
- Delivered ready assembled.
- Crane eyes as standard for safe transport to the installation site.
- Natural ventilation available on request.

NOTES FOR STORING FLAMMABLE MEDIA.

When storing flammable substances, the following must be observed: constructive equipotential bonding by earthing the steel frame construction and technical ventilation. **Additional notes and guidelines**  **SEE P. 11.**



MODEL	WHG 210	WHG 320	WHG 250	WHG 360
Storage area (m ²)	2	6	10	15
Containment volume (l)	320	660	1,135	1,770
External dimensions* W x D x H [mm]	2,165 x 1,028 x 2,320	2,990 x 2,215 x 2,235	5,028 x 2,215 x 2,235	6,028 x 2,800 x 2,235
Internal dimensions W x D x H [mm]	2,000 x 830 x 2,000	2,830 x 2,000 x 2,000	4,830 x 2,000 x 2,000	5,830 x 2,590 x 2,000
Weight* (kg)	460	870	1,330	1,860

Note: Dimensions and weights are approximate and may differ depending on optional equipment. Technical changes reserved.

*Without attachments.

STRUCTURAL ANALYSIS.

The structural calculations for the technical room system are based on Eurocode 3 (DIN EN 1993). The loads on the structure are measured according to Eurocode 1 (EN 1991-1-3) for a characteristic wind load $q_{k,w} = 0.585 \text{ kN/m}^2$ and a ground snow load $s_k = 2.5 \text{ kN/m}^2$. The structure is also designed for earthquake zone 3 according to DIN 4149, EN 1998-1:2004.

SHELVING.

Optionally available shelves can be used to create order for small containers in your hazardous materials store. The shelves can be stacked. They have three levels (grids) and are available in two sizes:

- 1,000 x 500 mm (W x D, shelf load: 75 kg*, bay load: 225 kg).
- 2,000 x 500 mm (W x D, shelf load: 120 kg*, bay load: 360 kg).

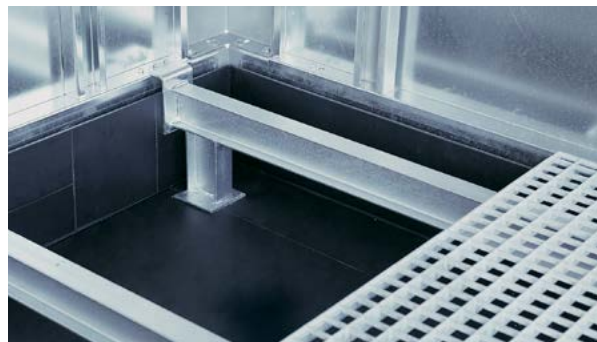
*Shelf loads are with an evenly distributed load.

EQUIPMENT OPTIONS.

Our tip: SpillGuard® connect detects dangerous leaks and sends an alarm to your smartphone in real time if there is an emergency. This allows you to react immediately, gain valuable time and avoid any subsequent costs. We will be happy to discuss your individual requirements in a personal consultation. Our experts will design a customised solution with you on site. **An overview of additional equipment options can be found here** [FROM P. 64](#).



Spillguard® connect leak recognition system.



PE inliner for acids and alkalis (LGK 8), dissipative version available.

HAZARDOUS MATERIALS STORES FROM DENIOS.

CUSTOMISED SOLUTIONS.

SECTION III

EQUIPMENT.

Use the huge variety of DENIOS products to set up your hazardous materials store to meet your specific needs. If you wish, we can take care of the electrical equipment, the fire alarm system and the condition monitoring system, for example. Discover innovations for modern hazardous material storage in our equipment range.

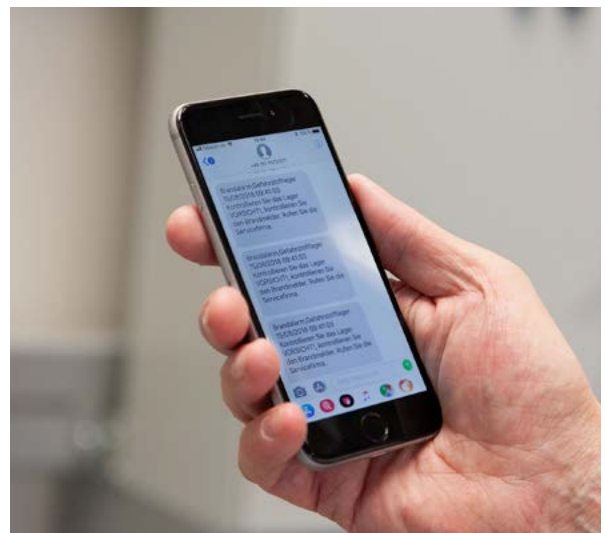
EQUIPMENT FOR HAZARDOUS MATERIALS STORES.

MODERN WORKING ENVIRONMENT. INNOVATIVE ROOM SOLUTIONS.

Safety requirements for hazardous materials stores are becoming increasingly stringent. But is safety the only requirement for a hazardous materials store? When looking at the modern working environment, it's clear that digitalisation is bringing significant change to work processes, complexity is increasing and climate change is making us change our approach. But what kind of influence does this have on storage and process technology? We have set ourselves the goal of helping to promote the development of a modern work environment. In the new DENIOS equipment range for technical room systems you'll find numerous options for creating a future-oriented workplace.



Think Green: use your green fingers and increase the insulation value of your hazardous materials store at the same time. A living layer of insulation for the roof of the store makes a significant contribution to the environment, increasing insects, retaining rainwater and binding fine dust. The attractive appearance also increases the sense of well-being.



The advent of digitalisation: keys, knobs, switches, paper? The modern world of work hasn't been that way for a long time: digital access systems, touch panels, video monitoring, database services for condition monitoring or warehouse management and much more, have changed work processes, making them safer and more efficient. Digitalisation is also making its way into storage and process technology at DENIOS.

DIGITAL SERVICES.

The storage of hazardous substances is subject to strict regulations and laws for reasons of work safety and environmental protection. Planning, organising and operating a hazardous materials store entails a multitude of challenges and obligations for the operator. The digital services from DENIOS offer reliable and convenient support for these tasks.





SECURELY NETWORKED. CONDITION MONITORING FOR HAZARDOUS MATERIALS STORES.

WEB APP FOR A NEW LEVEL OF SECURITY - ANYTIME, ANYWHERE.

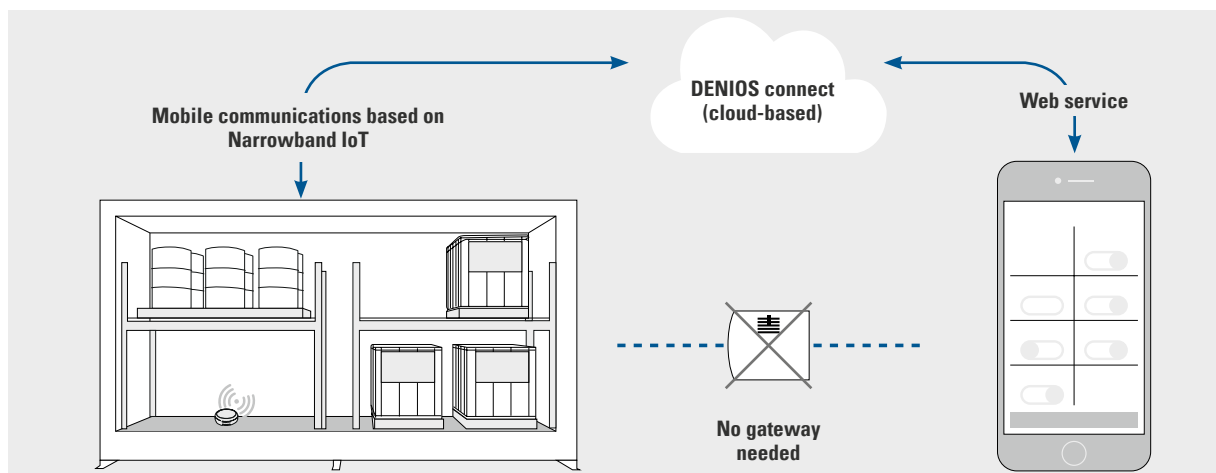
As an operator, you know that you must regularly check the proper condition of your hazardous materials store, as required by law. This inspection must comply with the specific requirements of the Industrial safety regulation (BetrSichV) for the risk in question, e.g. in the case of fire and explosion hazards. In addition, a weekly visual inspection must be carried out for spill pallets in accordance with the Water resources law (WHG). DENIOS connect offers you optimum support so that you can complete all the necessary checks properly - with the help of practical data transmission and intelligent condition monitoring solutions.

Regardless of whether you are on the move on your company premises or on standby duty: the active DENIOS connect sensors permanently monitor the condition of your hazardous materials store and spill pallets. If there is a leak, smoke or other fault, DENIOS connect sends you an alarm - in real time as an SMS or e-mail on your smartphone, tablet or desktop PC. You can react immediately, saving valuable time as well as any subsequent costs for rectifying the situation. The incident report documenting the event can be easily downloaded as a PDF. In addition, a reminder function ensures that you never miss a maintenance appointment. DENIOS connect makes hazardous materials storage safer and more sustainable than ever before.

STATE-OF-THE-ART MOBILE COMMUNICATIONS TECHNOLOGY: NARROWBAND IOT.

DENIOS connect is a user-friendly, cloud-based web app. It has been tested according to the latest security criteria and complies with the strict rules of the General Data Protection Regulation. NarrowBand IoT, currently the most efficient mobile network technology for applications such as DENIOS connect, is used for data transmission. Independent of your company network, you will have access to the relevant data and alarm messages from your hazard-

ous materials store at any time and from practically anywhere in the world. Narrowband IoT is based on LTE and uses the associated 3GPP security mechanisms. The technology is specially designed for smaller data volumes and dispenses with unnecessary LTE functions. It therefore offers particularly cost-effective and reliable mobile communication.



WEB APP - QUICK AND SIMPLE TO ACTIVATE.

The DENIOS connect web app can be activated in just a few steps. When you purchase a DENIOS connect product, you will receive a login code to enter when registering for your company account. The assignment of admin and user roles as well as passwords are easy to manage in the application itself.

All your products are clearly displayed on the DENIOS connect user interface. Recipients for the alarm messages can be saved and the type of notification selected: SMS and/or e-mail. Choose from predefined details for the message text. Alternatively, you can opt for the "free text" option. In addition,

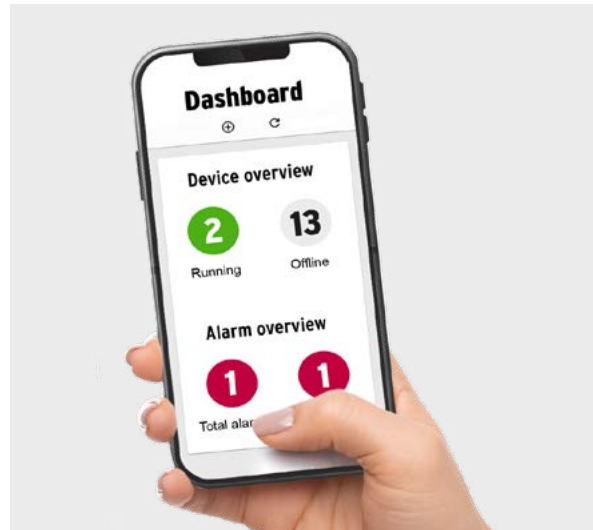
you'll have access to dashboards and detailed information on your networked DENIOS products.

If there are several hazardous materials stores and spill pallets on your premises, you will of course be informed of the exact location for the alarm message in the event of a malfunction.

MEASUREMENTS FOR CONDITION MONITORING.

Permanent status recording, alarm configuration and notifications by SMS and/or email are possible for the following safety-relevant components of the technical room system:

- Room temperature.
- Air conditioning system (operating / fault).
- Technical ventilation (operating / fault).
- Heating (operating / fault).
- Door control unit / fire alarm (fault).
- Door (open / closed).
- Central power supply (operating / power failure).
- Gas sensor (fault).
- Leak sensor (fault).
- Upcoming maintenance (info).



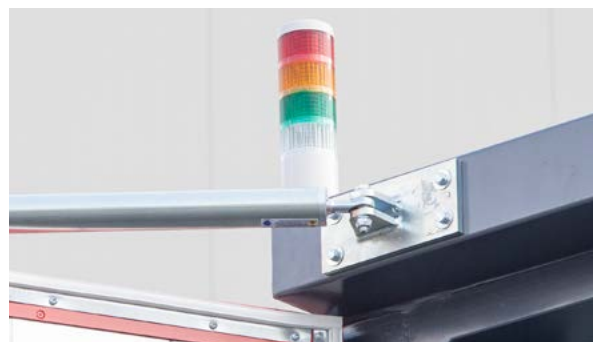
SPILLGUARD® CONNECT LEAK RECOGNITION.

The first warning system of its type: fully autonomous, operational at the push of a button and suitable for fitting to any type of spill pallet, at any time. SpillGuard® connect safely detects dangerous leaks and sends a leak warning message via SMS and/or email to your smartphone, tablet or desktop PC. You can react immediately, saving valuable time in cleaning up the leak as well as any subsequent costs.



THE ON-SITE WARNING.

DENIOS connect transmits data and signals that are also available to view on site at the hazardous materials store at any time. This gives you comprehensive warning as soon as there is a problem. For example, use the DENIOS Communication Bar (see Control technology, [P. 71](#)) to get a quick overview of all important condition variables on the easy-to-use touch screen. The alarm function can be provided using visible warning lights and/or audible sirens.



TEST DENIOS CONNECT – LIVE.

See the advantages of DENIOS connect technology for yourself in a live demonstration.

Get more information and book a free consultation: +49 5731 753 455 |



AIR CONDITIONING TECHNOLOGY.



In this context, we consider air conditioning technology to be the heating, ventilation, air conditioning and cooling technology used to regulate the internal climate. A reliable air conditioning system for heat or frost-sensitive stored goods is required in many industrial areas, for example to protect stored containers from the damaging effects of temperature.

AIR CONDITIONING SYSTEM.

- For all insulated DENIOS hazardous materials stores and fire-rated stores.
- In the standard design, internal temperatures of +5 °C at an external temperature down to -15 °C, or an internal temperature of +25 °C at an external temperature up to +35 °C are achieved.
- Also available in Ex proof design (for internal area only).



FINNED TUBE HEATERS.

- For all insulated DENIOS hazardous materials stores and fire-rated stores.
- With integral safety temperature limiter to prevent overheating.
- Available in Ex and nEx proof versions.
- For larger room systems, recirculated air heating can also be used.



TECHNICAL VENTILATION.

- For effective cross-ventilation of the hazardous materials store.
- Weatherproof housing for outdoor installation.
- Air inlet and extraction openings protected from the weather by mesh and secured by fire protection flaps for fire-rated stores.



AIR EXTRACTION MONITORING.

- Explosion protected airflow monitor (pressure switch).
- Monitoring the effectiveness of technical ventilation in accordance with TRGS 510 Annex 5 Para. 2 (6).
- Suitable for gas, mist, vapour and dusts in zones 1, 2, 21 and 22 (non-aggressive media).



CONTROL TECHNOLOGY.



The control technology, which is optimally matched to DENIOS storage and process technology, records, processes and compares actual measured values with setpoint values using state-of-the-art sensor technology. If there are deviations from the setpoint value or a fire occurs, an alarm is triggered visually and audibly. In addition, automatic locking or extinguishing systems are activated, for example. All information is clearly displayed on the operating and display elements.

COMMUNICATION BAR.

- For DENIOS walk-in fire-rated storage container WFP.
- Developed by DENIOS.
- Modern, central control unit for all electronic components of the technical room system incl. access control via RFID.



BASIC CONTROL SYSTEM.

- Acquisition and processing of current measurement data.
- Switching logic optimally matched to DENIOS storage and process technology.
- Further details can be found in the product description on our website.



COMFORT CONTROL SYSTEM.

- Acquisition and processing of current measurement data, which is saved for twelve months.
- Modern touch panels / displays for indoor or outdoor use with high operating comfort.
- Further details can be found in the product description on our website.



ENCLOSURE OF OPERATING ELEMENTS.

- Enclosed controls and operating elements are protected from unauthorised access in the front of the switch cabinet.
- Access is restricted as the control cabinet is locked with profile half cylinders.



MAKING USE OF THE SPACE IN WALK-IN STORES.



When storing hazardous substances, it's not just safety but also efficient use of the available space is an important factor. It depends on what types of media you want to store and how. With our height-adjustable shelves, you can conveniently store small containers, for example. Partitions can be inserted to create different areas for the combined storage of hazardous materials.

BUILT-IN SHELVES FOR FIRE-RATED STORES.

- For DENIOS walk-in fire-rated storage container WFP.
- For the safe and stable storage of various small containers and canisters.
- Available in three different widths (750, 1,000 and 1,300 mm) with a depth of 500 mm.
- Shelf load with an evenly distributed load: 250 kg, bay load: 800 kg.



PARTITION WALLS.

- Create different placement / storage / climate / temperature areas in the same room system.
- Different substances can be placed / handled separately from each other in compliance with the law / temperature requirements.
- For smaller quantities, it's a cost-effective alternative to separate room systems.



DOSING TECHNOLOGY.

- For DENIOS walk-in fire-rated storage container WFP.
- Appropriate mounting rails are fitted to the interior walls to accommodate piping on site.
- The pipe break-through points for non-combustible pipes are fire-resistant with F 90 approval.
- Ex-version according to customer's Ex-assessment.



STORING HAZARDOUS MATERIALS TOGETHER IN COMPLIANCE WITH TRGS 510.



TRGS 510 gives information on the state of the art for storage of hazardous materials in transportable containers and also gives concrete information within its scope of application on the requirements of the Hazardous substances regulation. Our online guide gives an overview of the legal provisions for the combined storage of hazardous substances, which are dealt with in TRGS 510.

MAKING USE OF THE SPACE IN STORAGE CONTAINERS WITH SHELVING.



When we talk about "customised solutions", our custom planning capability is also reflected in the great variety of our storage containers with shelving. For example, you can choose different shelf heights, a variable number of storage levels or an extra-deep design.

ADJUSTABLE SHELF HEIGHTS.

- For DENIOS fire-rated shelving systems RFP.
- Height-adjustable shelf unit with removable grids and shelf guard.
- Choose any number of shelves between 1 and 4.
- Enables optimum use of the space for different types of containers.



PARTITION WALLS.

- Create different placement / storage / climate / temperature areas in the same room system.
- Different substances can be placed / handled separately from each other in compliance with the law / temperature requirements.
- For smaller quantities, it's a cost-effective alternative to separate room systems.



EXTRA DEEP DESIGN.

- The extra-deep design of the shelving system offers an increased storage capacity and more space for bulky goods.
- In combination with access from both sides, the room system is easy to load.
- In the extra-deep version, the shelving system can also be created as a fully or partially walk-in room system.



IN PRACTICE: A CLEVER COMBINATION OF STORAGE CONTAINER WITH SHELVING AND WALK-IN SPACE.



As an engineering expert for future mobility, our customer EDAG Group also deals with the electrification of vehicles. For the E-Drive & Battery product range, the company required a secure outdoor storage facility for traction batteries up to 700 kg and small lithium battery cells. In order to accommodate the various goods in one room system, the store is divided into a walk-in section and one that can be loaded with a forklift truck.

Read the full report here [WWW.DENIOS.DE/EDAG](https://www.denios.de/edag)

ROOM ACCESS.



When planning room access, you should consider various aspects: in addition to high security with electronic access systems or hold-open systems for fire doors, convenient operation plays an important role. Smooth work processes can be guaranteed by using remote controls and ramps to ensure barrier-free access to the hazardous materials store for lifting and transport tools.

DOOR HOLD-OPEN SYSTEM.

- For fire-rated stores with wing doors from DENIOS.
- The door is held open by an electromagnet as a counter-support.
- When the door closing button is operated or if there is an alarm, the power to the electromagnet is cut and the door closes.



EXTERNAL LIGHTING WITH MOTION DETECTOR.

- External lighting with motion sensor.
- For brightness and motion-dependent lighting control.
- Large detection range.



DOOR REMOTE CONTROL.

- For DENIOS fire-rated storage container RFP SD-ED.
- The electric sliding doors can be easily opened and closed from the fork-lift, saving time, with a practical remote control unit.



COMMUNICATION BAR.

- For DENIOS walk-in fire-rated storage container WFP.
- Developed by DENIOS.
- Modern, central control unit for all electronic components of the technical room system incl. access control via RFID.



PRODUCT HANDLING.



DENIOS develops products to make every hand movement and step even safer and more comfortable for your employees. This is the only way to increase work safety in everyday operations. In our equipment range you will find efficient solutions for handling drums and pallets. For example, roller conveyors and support rails make it easier to position pallets and enable optimum use of the storage space.

PUSHBACK TROLLEY CONVEYOR SYSTEM.

- For DENIOS storage container with shelving SC in extra deep design.
- Pallets stored according to the Last-In-First-Out principle.
- The pallets can be set both lengthways and crossways.
- Particularly safe: despite rail angle, the pallets are in a horizontal position.



SUPPORT RAILS FOR PALLET.

- Facilitates the positioning of pallets in the racking system.
- Full-length support rails.
- Enables exact positioning and thus optimum use of the available space.



CONVEYORS FOR DRUMS AND PALLET.

- Drum/pallet transport by driven rollers or lifting and lowering roller conveyor (gravity conveyor).
- Adapts to suit the task exactly.
- Low maintenance and wear-free.



OVERHEAD CRANE BEAM.

- Crane system for lifting and transporting heavy loads within the room system.
- Suspended pushbutton attached for operation on the move.
- Mechanical slip clutch as overload protection.



HORIZONTAL DRUM STORAGE.

EASY DISPENSING FROM THE DRUM.

HORIZONTAL DRUM STORAGE ON DRUM RACKS.

Horizontal drum storage offers a space-saving solution for direct dispensing. Use stacking shelves or pallets to flexibly design the interior of your hazardous materials store. The equipment is optimally designed for horizontal drum storage and can be individually extended, e.g. with rotatable roller supports or dispensing trays in steel or polyethylene (PE).

- Flexible use of the space.
- Individually extendable.



Hazardous materials store SC becomes a safe and convenient dispensing station for horizontal drums with drum racks.

DRUM ROLLER SUPPORTS FOR HORIZONTAL DRUM STORAGE.



PULL-OUT DRUM SUPPORTS FOR EASY LOADING FOR HORIZONTAL DRUM STORAGE.

Item No. 115437 (on request)



SHELF SUPPORTS FOR HORIZONTAL DRUMS.

Our shelving systems with several storage levels are also suitable for horizontal drum storage and direct dispensing. They also offer the option of installing fixed or extendable shelf supports and expanding them with rotatable roller supports,

- Space-saving and convenient solution for direct sampling from the drums.
- Pull-out shelf supports make it easier to load drums.



In extra-deep design, hazardous materials store SC becomes a walk-in dispensing station - combined with the advantages of a storage container with shelving for horizontal drums.

EASY HANDLING FOR HORIZONTAL DRUM STORAGE WITH DRUM GRIPPER RLN.

- Compact design drum gripper for standing and horizontal 205 litre steel drums.
- Automatic locking.
- Drums can be placed next to each other on a shelf.
- The upright drum is gripped and brought to a horizontal position by lowering the forks of the forklift truck.
- The drum can then be stored without any additional manual effort.
- Tested and suitable for use in EX zones: IIB T4 Zone 1.



FIRE PROTECTION.



For flammable and oxidising media, legislators require compliance with the strictest fire protection regulations to protect people and the environment. You should get information in good time on the various requirements and define the measures which will give the best possible protection from the risks of fire.

FIRE BULKHEADS.

- For the DENIOS walk-in fire-rated stores WFP and the DENIOS fire-rated shelving systems RFP.
- Fire-rated bulkheads for breakthrough points in fire-rated store walls.
- For cable installations and pipes or ventilation pipes and ducts (fire protection flaps).



AEROSOL EXTINGUISHING TECHNOLOGY.

- For the DENIOS walk-in fire-rated stores WFP and the DENIOS fire-rated shelving systems RFP.
- Extinguishing technology with aerosol according to EN 15276-1, without addition of water.
- Significant cost savings as there is no need for fire water retention systems according to AwSV.



EXTINGUISHING SYSTEM.

- Semi-fixed extinguishing systems for supply by the fire brigade.
- Designed according to the VDS guideline for operation with water or low expansion foam.
- Pipe dimensioning according to hydraulic calculation of the sprinkler pipe network.



EXTINGUISHING WATER EXTRACTION.

- Targeted drainage of the extinguishing water from the spill pallet.
- Suction nozzle for emptying the spill pallet with on-site pump.
- The pipe break-through points through the side wall of the fire-rated storage container are fire-resistant with F 90 approval.



POWDER EXTINGUISHERS.

- Fast flow extinguishers.
- Ideal for areas which cannot be monitored by a person.
- Trigger automatically when exposed to heat.
- For fire classes A, B and C.
- 6 kg extinguishing medium.
- Trigger temperature +79 °C. Operating range to -30 °C.



HANDHELD POWDER EXTINGUISHER.

- High quality, low maintenance dry chemical powder extinguisher in accordance with EN 3.
- For fire classes A, B and C.
- Various sizes and extinguishing agent units available.



FIRE ALARMS.

- Protection of a fire-rated storage container is dependent on early recognition of any fire.
- DENIOS fire alarms are equipped with approved multi-sensors, which detect smoke and fire quickly and reliably.
- Integrated into the control technology of the room system, further protective measures can also be mapped.



THINK ABOUT MAINTENANCE NOW.



DENIOS fitters are qualified to maintain fire doors and gates and are also qualified to test and assemble fire protection flaps and fire protection elements. We'll remind you when regular maintenance is due and make sure it's carried out.

Book your free consultation now: +49 5731 753 216

EXPLOSION PROTECTION.



In order to counteract the development of explosive gas concentrations when storing flammable liquids, DENIOS hazardous materials stores are equipped with natural or technical ventilation. Ventilation takes place near the floor and can be supplemented by air extraction monitoring. If an Ex zone is defined in your ATEX assessment, equipment which could represent a potential source of sparks in the Ex zone can be supplied in the corresponding Ex design. Optional earthing equipment (for example earthing rails) is available for equipotential bonding.

EARTHING RAILS.

- For DENIOS walk-in fire-rated storage container WFP.
- For earthing connection inside the store.
- Provides the necessary equipotential bonding with an external earthing pin as a connection.



EARTHING SET.

- For all DENIOS hazardous materials stores used to store flammable liquids (H224-H226).
- Earthing bracket for equipotential bonding.
- Sticker set with warnings.



GAS WARNING EQUIPMENT.

- For DENIOS fire-rated storage containers WFP and RFP.
- Explosion-proof transmitter for the detection of combustible gases and vapours.
- Used for preventive fire and explosion protection.



EXPLOSION PROTECTION. CURRENT KNOWLEDGE AND SOLUTIONS.



Many substances pose an explosion hazard. For example, the vapours of flammable liquids such as paints or solvents - but also churned up combustible dusts. No matter whether it's processing, transport, sampling or storage: in an Ex area, employees and equipment must have the best protection. At DENIOS you'll not only find practical guides and training materials, but also the right solutions.

AT SOURCE CAPTURE.

- For DENIOS walk-in fire-rated storage container WFP.
- At source capture and filtering of extracted air.
- Special products for Ex areas.



WALL SOCKET IN EX DESIGN.

- For DENIOS fire-rated storage containers WFP and RFP.
- Version 220-415 V, 50/60 Hz, 16 A, 5-pole, as switch socket.
- EEC system socket.
- Mounted above the grids on a side wall (inside/outside).
- Fuse protection with circuit breaker and FI circuit breaker (B-16 A) in switch cabinet.



PRESSURE RELIEF PANELS.

- For DENIOS fire-rated storage containers WFP and RFP.
- Ensures controlled pressure equalisation in the event of an explosion and resealing after the pressure wave has dissipated.
- Assembly takes place in the DENIOS plant and is therefore an integral part of the turnkey system.



DENIOS ACADEMY: TRAINING FOR "QUALIFIED EX-PROTECTION PERSON".



The ATEX Directives for the manufacturer (Directive 2014/34/EU) and the operator (Directive 1999/92/EC), the 11th ProdSV, the Hazardous substances regulation and the Industrial safety regulation place high demands on explosion protection as well as on the installation, operation and testing of equipment and systems in potentially explosive atmospheres. Our course guides you through the basic legal provisions and familiarises you with the most important aspects of your tasks. This enables you to implement explosion protection in your company in a professional, legally compliant and safe manner.

View the seminar content here [WWW.DENIOS.DE/AUSBILDUNG-EX-SCHUTZ](https://www.denios.de/ausbildung-ex-schutz)

WORK SAFETY.



The safety of your employees is the highest priority. We support you in meeting your duty of care: our product range includes many options for suitable work health and safety equipment.

SAFETY BARRIERS AND IMPACT PROTECTION.

www.denios.de/rammschutz

- Effective hazard prevention for internal traffic accidents.
- Depending on the application, variable impact protection systems and barriers are available.
- Products suitable for indoor and outdoor use.



VIDEO SURVEILLANCE.

- For the DENIOS walk-in fire-rated stores WFP and the DENIOS fire-rated shelving systems RFP.
- Camera surveillance and recording of the hazardous area, inside or outside.
- Also available in Ex proof design.



LOCKABLE INFOBOARD OUTDOOR.

- For all DENIOS hazardous materials stores and fire-rated stores.
- Suitable for clearly displaying appropriate work instructions and information for work safety in accordance with the risk assessment.



EMERGENCY SHOWERS AND EYE WASH STATIONS.

- For walk-in hazardous materials stores.
- Provision of first aid in the immediate vicinity of the work process.
- The pipe break-through points through the side wall on the fire-rated storage container are fire-resistant with F 90 approval.



EMERGENCY SIGNALING.

- Various signaling systems are available depending on requirements, e.g. alarm manual call point, fire alarm.
- Can trigger audible and/or visual warning signal and/or forward to process control system.
- Integrated into the control technology of the room system, further protective measures can also be mapped.



FIRST AID.

- A first aid station attached to the storage room or nearby provides quick access to the necessary first aid.
- Our first aid range contains a large selection of products.
- Choose your ideal options according to your needs.



WORKTABLE WITH HARMFUL SUBSTANCE CAPTURE.

- For walk-in fire-rated storage container WFP.
- Sturdy worktable with harmful substance capture for compliance with workplace exposure limits (WEL).
- Wide range of equipment options, e.g. washbasin for cleaning work, media supply, air extraction fan, side elements or filter systems.



WASHBASIN.

- For walk-in hazardous materials store MCV and fire-rated storage container WFP.
- Enables hand cleaning in the immediate vicinity of the work process.
- The pipe break-through points through the side wall of the fire-rated storage container are fire-resistant with F 90 approval.



OUTDOOR INSTALLATION.



Extreme weather conditions are becoming more frequent. This must be taken into account in the design and statics of a room system that will be installed outdoors. DENIOS room systems are stable and resistant to the effects of external forces. Additional equipment also offers protection from the elements for both personnel and products.

STATICS FOR INCREASED LOADS.

- Increased statics for DENIOS fire-rated stores WFP and RFP.
- Up to wind load zone 4, terrain category I ($q_w = 1.064 \text{ kN/m}^2$) and for up to ground snow load $s_k = 5.86 \text{ kN/m}^2$.
- Can only be fitted when the room system is initially equipped. Not able to be retrofitted.



EXTENDABLE ENTRANCE CANOPY.

- For DENIOS walk-in fire-rated storage container WFP.
- Practical, extendable canopy for the entrance area for bad weather protection.
- Assembly takes place in the DENIOS plant and is therefore an integral part of the turnkey system.
- On site, the canopy is extended and locked in place.



ROOF HEATING.

- Heating of the roof surface helps to prevent a build up of snow.
- Can be installed with an external temperature sensor and a controller.
- Optional heated rain channels remain frost-free even in sub-zero temperatures ensuring optimum drainage.



GREEN ROOFS.

- For DENIOS walk-in fire-rated storage container WFP.
- Use your green fingers and increase the insulation value of your hazardous materials store at the same time.
- A living layer of insulation for the roof of the store makes a significant contribution to the environment, increasing insects, retaining rainwater and binding fine dust.



PREPARATION CHECK.

- Free check of the material condition, function and equipment of your hazardous materials store by our certified service personnel with manufacturer's expertise.
- Free initial consultation for preparation and preventive maintenance by our service technicians.



STRUCTURAL ANALYSIS. SAFE UNDER EVERY LOAD.



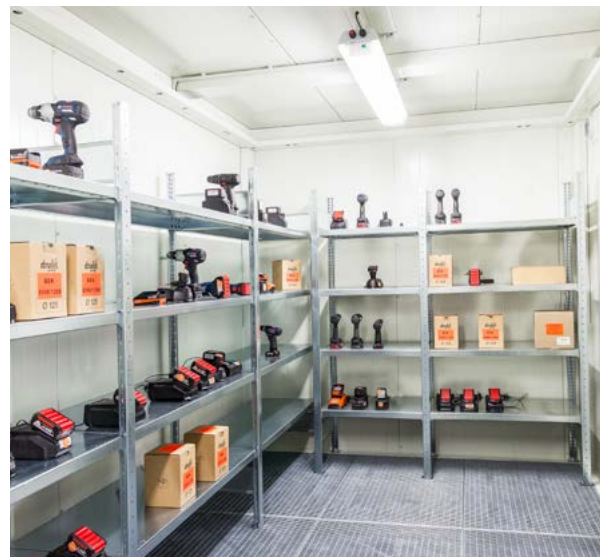
Protected in wind and weather. To ensure that DENIOS hazardous materials stores always stand firm wherever they are, we test them beyond the normal load limits. In addition to extensive theoretical calculations, we carry out long-term tests and practical trials. In this way, we ensure that the statics for our hazardous materials stores can withstand external forces from wind, snow and earthquake loads. Regional load differences in the form of load zones can be found on our website.

OTHER PRODUCT AREAS. DENIOS STORAGE AND PROCESS TECHNOLOGY.

DENIOS manufactures safe and environmentally friendly storage technology in steel, as well as heat chambers and fume cupboards for process technology. Products are designed to suit the storage or process medium and the associated activities. Based on standardised systems, customers can choose individual elements from our wide range of equipment. Custom solutions can be created in all product areas. You'll benefit from excellent customer support - on site where needed.

STORAGE AND TEST ROOMS FOR LITHIUM BATTERIES. SAFETY FROM THE EXPERTS.

The hazard potential when handling lithium batteries is high. Deep discharge, fire, chemical reactions, explosion in the worst-case scenario – each individual situation means a risk for workers, companies and the environment. This is where DENIOS can help. We offer a comprehensive range of specialist products to ensure your safety. Whether you need to safely store, charge or test lithium energy storage devices.



THERMOTECHNOLOGY. EFFICIENT HEATING, MELTING OR COOLING.

Whether heating, cooling, tempering, melting or drying: we offer customised thermotechnology solutions for all industrial sectors that work with temperature-sensitive substances. Solutions for small requirements and for large volumes. Whether heating or melting up to 150°C, frost-free storage or cooled down to -25°C – with DENIOS you've got the right equipment for all your needs.



CONTAINMENT. TECHNICAL VENTILATION SYSTEMS FOR CAPTURING HAZARDOUS SUBSTANCES IN THE WORKPLACE.

Work and production processes in many areas of industry and the chemical and pharmaceutical sectors require the handling of substances or materials which produce hazardous emissions while being processed. DENIOS worktables and multi-task workstations offer personal, product and room protection at the highest level, with explosion protection as an option.



TECHNICAL SAFETY ROOMS. SENSITIVE TECHNOLOGY SAFELY HOUSED.

High value, technical equipment and electrical installations are needed in all sectors. Often the technology is not just used in fixed buildings or rooms, for reasons of space. Mobile solutions are in demand for frequent infrastructure changes or for outdoor applications. This is where DENIOS technical safety rooms (TSR) are used – e.g. on the roof of a hospital or administration building, inside a substation, in a port terminal or on a railway line. Our fire and vandal-protected room systems house emergency power systems for uninterruptible power supplies, power generators (e.g. diesel generators or fuel cells) as well as radio and energy technologies in a flexible manner. Many other applications, such as the testing of lithium energy storage devices can be created.



SERVICE & MAINTENANCE FROM DENIOS. EVERYTHING FROM ONE SUPPLIER.

Proper regular maintenance and servicing of a hazardous materials store is needed to ensure permanently safe operation that complies with the law at all times. It also ensures that your hazardous materials store retains its value. Only qualified and certified fitters and technicians are legally allowed to service and maintain hazardous material stores. At DENIOS we're your service partner, with the all the expertise of a developer and manufacturer - reliable, competent and always at your side.



DENIOS



OFFICIALLY CONFIRMED: OUR TEAM HAS ALL

Hazardous material storage is a very sensitive area and must therefore comply with a large number of legal requirements. In order to be allowed to carry out services - especially on electrical systems and fire and explosion protection devices - the specialist must be appropriately qualified.

The DENIOS service team has a very broad base and is also ideally equipped to handle complex requirements. We have all the qualifications and certifications required to service and maintain a hazardous materials store. The use of DENIOS specialists ensures that you can benefit from our comprehensive expertise as a manufacturer for all service options.

We not only know the technical criteria of the individual components, but we also understand the interaction of all the factors involved - ensuring the holistic, safe functioning of your hazardous materials store.

Whether maintenance, repair or spare parts: we'll be happy to carry out a non-binding consultation at your location, free of charge, including a professional inventory. On this basis, we can then organise customised service from our team for you.

CERTIFICATIONS OF THE DENIOS SERVICE TEAM.

Our employees have up-to-date specialist knowledge and also regularly take part in further training. This allows us to react quickly to your requirements. Of course, we will always observe any company-specific safety regulations at the installation site. Here you will find an example of our qualifications for servicing on and in a hazardous materials store:

- SCC training.
- Qualified person for fire-rated doors and gates as well as specialist for hold-open systems.
- Expert for testing and assembling fire protection flaps and fire protection elements according to DIN 4102 and DIN 18017.
- Qualified person in electrical and mechanical explosion protection.
- Welding test certificate.
- Driving licence for motor-driven industrial trucks according to DIN 15140 (combustion engine and electric drive) and operator's licence for aerial work platforms.
- Measurement/testing technology seminar on electrical systems (DGUV V3, DIN VDE 0100, DIN VDE 0701-0702).
- Dangerous goods training according to 1.3 ADR and § 6 GbV.
- Qualified electrician for specified activities.
- Expert for the testing of electrical systems (DGUV V3, DIN VDE 0100, DIN VDE 0701-0702).
- Expert on refrigeration and air-conditioning systems and heat pumps. (Category EG 303/2008, EG 842/2006, § 5 ChemKlimaschutzV).





The DENIOS service team is your reliable partner. Advice at the ready, hands-on and always with a solution.

MORE HIGHLY QUALIFIED OFFERS FOR SECURITY & SERVICE.



Do you have other company equipment to maintain besides your hazardous materials store? Feel free to contact us, our portfolio of services is wide-ranging and is regularly expanded.

 WWW.DENIOS.DE/SERVICE-WARTUNG

MAINTENANCE FROM DENIOS.

WHY PROFESSIONAL AND REGULAR SERVICE IS SO IMPORTANT.

For safety reasons, the storage of hazardous substances is subject to strict regulations and laws. Operating such a store comes with a number of challenges and obligations. Regular inspection, maintenance and servicing of the hazardous materials store and its individual components is not only required by law, but also ensures the long-term serviceable condition of the entire room system. Operators who fail to comply with these obligations

risk heavy fines and, in the event of damage, the loss of insurance cover. In addition, operators must also carry out inspections that are not directly mandated by law in order to maintain the hazardous materials store. For example this includes checking the roof drainage, to make sure it is not blocked. At DENIOS, we provide you with competent support and advice in all matters relating to prescribed and required maintenance activities.

THE DENIOS MAINTENANCE SERVICE COVERS:

- One-off inspection or maintenance contract.
- Trained and certified service technicians.
- On-site repair of defects and damage, where possible. Large scale repairs will be quoted for and carried out separately.
- Preparation of service reports and inspection records.
- Fitting the test sticker(s).
- Travel costs and small consumables are always included in the maintenance price.

THE ADVANTAGES FOR YOU:

- Legal compliance.
- Maintenance of your insurance protection including limitation of company liability in the event of a loss.
- Avoidance of costly repairs with regular maintenance.
- Minimised risk of downtime and extended product life.
- Maintenance appointment reminder from DENIOS.
- Safety for your employees and your company.



Ingo Schlutter, Head of Quality and Service, DENIOS AG, and his team will ensure that you comply with all the legally specified maintenance intervals. We will proactively contact you and will be happy to carry out all the necessary inspection, maintenance and servicing work for you. Professional and reliable.

INSPECTION PROCESS.

Our DENIOS service team completes the legally compliant testing procedure as a holistic process and checks each prescribed criterion conscientiously and professionally.

CONDITION MONITORING.

We check your hazardous materials store for damage inside and outside and identify possible problems in the way it operates. We pay special attention to the installation conditions: our experienced technicians check statics and mountings as well as safety distances and accessibility. We also check for contamination, especially in spill pallets, ventilation grilles and roof drainage.

FUNCTIONAL TEST.

DENIOS specialists precisely check the locking mechanisms of doors and gates as well as fire protection flaps. We also inspect the technical ventilation and check the operation of the electrics and control technology. In addition, fire detection in the hazardous materials store is tested, and the heat exchangers on heaters and air-conditioning units are also examined.

COMPLIANCE INSPECTION.

Compliance with the legally prescribed containment volume of the spill pallet(s) is an essential factor for the safety of the hazardous materials store and is therefore carefully checked. The presence of the legally required markings is also examined as part of the compliance inspection. Organisation in the store is also an inspection criterion.

TEST REPORT AND STICKER.

After completion of all required inspections, the responsible inspector fills out and stamps the service booklet in accordance with the regulations. If the hazardous materials store can be successfully approved, he issues the corresponding inspection sticker.



YOUR RESPONSIBILITY. OUR EXPERTISE.

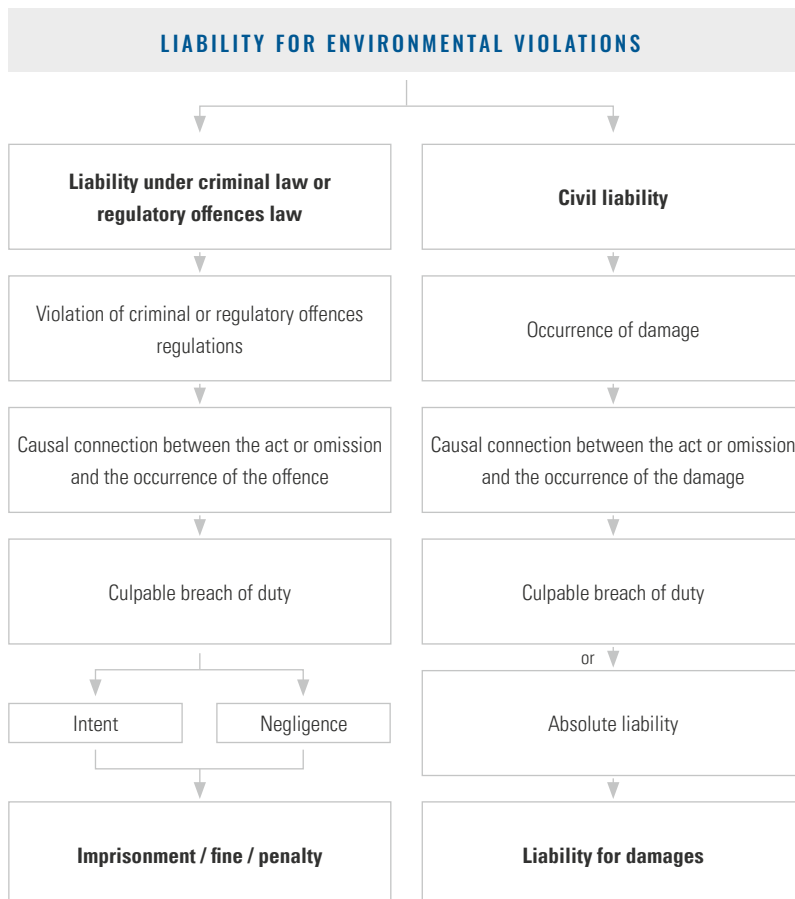
Take advantage of our decades of experience as a developer and manufacturer to fully comply with the legal requirements for your hazardous materials store. DENIOS is at your side as a competent partner with a holistic understanding of your requirements - from planning of the hazardous materials store, to assembly and commissioning, to regular maintenance. The special technical and legal conditions for such a store are taken into account, right down to the smallest detail. Your advantage: you not only get an approved, reliable and highly effective room system for your premises, but also benefit from a comprehensive range of services.

REGULAR OBLIGATIONS. FOR GOOD REASON.

As the operator, you are responsible for managing, monitoring and maintaining the hazardous material store in such a way that it is in a proper condition and can serve its intended purpose: the safe storage of hazardous substances.

For example, you must ensure that:

1. National regulations for the storage of hazardous substances as well as for work safety, water and environmental protection are observed;
2. The hazardous materials store is always operated as intended in accordance with the company's safety and fire protection design and the explosion protection requirements according to Directive 1999/92/EC are observed;
3. Misuse and unauthorised access are prevented;
4. Operating faults and damage are immediately and professionally repaired;
5. Regular inspection intervals are observed and documented.



If there is an operational fault, you as the operator are always well advised to contact the manufacturer's service department first. A telephone call can often help to solve any problems.

Our experts are here to support you and will be happy to advise you.

[✉ AFTERSALES@DENIOS.DE](mailto:AFTERSALES@DENIOS.DE)

[☎ +49 5731 753 216](tel:+495731753216)

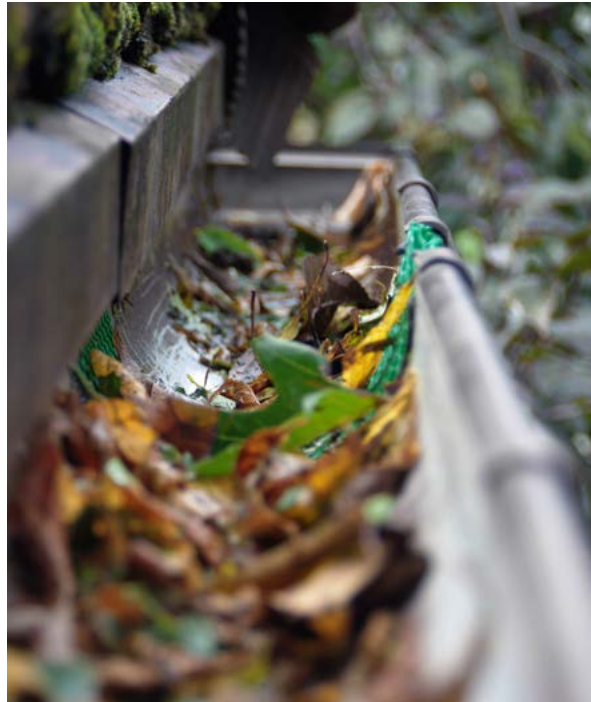


STOP YOUR HAZARDOUS MATERIALS STORE FROM TURNING INTO A TICKING TIME BOMB.

In the worst-case scenario, a hazardous materials store designed for the storage of water-polluting and flammable liquids is no longer functional in the event of fire or leak. The reason: lack of inspections and maintenance measures.

Leaves have clogged the roof drainage system and water has got inside the store. The spill pallet is filled to overflowing. One container is damaged and is leaking into the overflowing spill pallet, its contents running out of the door along with the rainwater. The wing door did not close properly after it was last used, as the door lubrication had not been checked for a long time. Inside the hazardous materials store, the operator is using a non-explosion-proof fan heater that he used to have in his office. A short circuit occurs - the catastrophe can no longer be prevented.

Our recommendation: follow the instructions in the manufacturer's operating instructions and take your legal obligations as an operator seriously. Environmental violations and personal injury can result in severe penalties and loss of company image.



DENIOS WHITEPAPER. KNOWLEDGE GAINED IN OVER 35 YEARS.

The storage of hazardous substances is subject to strict regulations and laws for reasons of work safety and environmental protection. On our website, there are numerous whitepapers on the subject, which will provide you as an operator and/or as a safety specialist with regularly updated new and important information. We'll ensure you're always up to speed.

- PLANNING HAZARDOUS MATERIALS STORES PROPERLY.
- OPERATING HAZARDOUS MATERIALS STORES SAFELY.
- EMERGENCY PLAN FOR HAZARDOUS MATERIALS STORES.
- CHANGES TO HAZARDOUS MATERIALS STORES.



THE SIX MOST IMPORTANT TEST CRITERIA.

Regular inspection of the hazardous materials store is mandatory for good reason. Even a failed fan or blocked roof drainage can have devastating consequences. The following six components of the hazardous materials store should be checked regularly.

1. SPILL PALLET – KEEP FREE FROM CONTAMINATION AND LIQUIDS!

The spill pallet must be kept free of contamination and liquids. To ensure this, a weekly visual inspection is required by law. This must be documented. If a leak is discovered during the inspection of the spill pallet, you should act immediately. This is because you are legally obliged to guarantee the required containment volume at all times. If there is already liquid in the spill pallet, the legally-required containment volume is no longer guaranteed. The hazardous materials store is also designed for a specific storage medium, so that in the event of a leak, the resistance of the spill pallet is ensured. Before storing other media, make sure that resistance also applies to these substances. While the surface protection of the spill pallet can be restored by the operator, repair work may only be carried out by a WHG specialist company.

Particularly problematic substances, which release hazardous vapours for example, need to be quickly dealt with to counteract the risks. Emptying of the spill pallet should be approached in the same way as the cleaning up of any other leak.



2. TECHNICAL VENTILATION – USE 24/7!

To counteract concentrations of explosive or health-endangering gases during storage of hazardous materials, hazardous material stores are equipped with natural or technical ventilation. The ventilation must be permanently active and must not be covered, blocked or switched off. An odour nuisance can be a fairly harmless consequence. Air contaminated with health-endangering, toxic or explosive gases represents a high safety risk and must be replaced according to a legally prescribed air exchange rate (see TRGS 510 Annex 5). For a variety of substances, technical ventilation can be combined with a gas detector. This increases safety for both people and the environment.

In a store with technical ventilation, air extraction monitoring must be provided in accordance with TRGS 510, No. 12.6.2 (6). This can also be retro-fitted. Technical ventilation and air extraction monitoring are subject to an annual inspection requirement. Ex-fans must be replaced approx. every 3-5 years or after 20-40 thousand hours in accordance with the manufacturer's operating instructions. The same applies if an assessment shows that heat or noise has become perceptible.



3. DOOR(S) – ENSURE SUFFICIENT LUBRICATION!

The pivot point of the door(s) must be greased regularly. Otherwise, there is a risk that the door will no longer close properly within a legally prescribed time window. This is particularly critical in the case of F 90 doors: if the proper door closing process fails, the hazardous materials store cannot withstand a fire.



4. FIRE PROTECTION FLAPS – OPERATE REGULARLY!

Operate the fire protection flaps manually at least once a month. Otherwise there is a risk that the spring will rust. The flap can then no longer close - with fatal consequences in the event of a fire.



5. ELECTRICAL COMPONENTS – ELIMINATE FAULTS IMMEDIATELY!

Before delivery, the manufacturer checks all electrical components of the hazardous materials store. Supply cables and connections must be provided by the customer. In accordance with DGUV V3/BetrSichV/VDE, the entire electrical system must then be inspected by an electrical specialist at regular three year intervals.



6. ROOF DRAINAGE – ENSURE RAINWATER DRAINAGE!

For outdoor installation, the gutters must be kept free of leaves, dirt, snow and ice. If the rainwater can no longer run away in a controlled manner, there is a risk of water penetrating the hazardous materials store. This can lead to considerable damage to the hazardous materials store and render the spill pallet unusable.



SET UP. COMMISSION. STAY SAFE.

You can rest easy with DENIOS: we'll take care of the safe delivery and professional assembly and commissioning of your room system. We also take care of regular maintenance and servicing on request.

TRANSPORT TO THE INSTALLATION SITE.

Our worldwide logistics network ensures smooth travel arrangements for delivery. Whether we use our own DENIOS flat bed trailer or a trusted freight forwarder, we ensure your room system is transported safely and arrives on time. Even special transport (extra wide or extra high) and overseas deliveries are no problem. We will take care of all the arrangements including obtaining the necessary special permits. Appropriate transport packaging is of course ensured. If required we can also provide suitable lifting equipment for unloading and final assembly.

INSTALLATION AND COMMISSIONING.

DENIOS technicians guarantee the professional installation of your room system and will work with you to complete the Site Acceptance Test including all installation and operational tests. Our standardised solutions can be commissioned immediately, as they have General technical approval; for customised projects approval from the authorities needs to be obtained. Right from the design and production phase, we take care of contact with the responsible authorities so that individual acceptance can proceed smoothly. Our specialist personnel will then instruct the users directly on the product and comprehensive product documentation will be handed over. DENIOS room systems: set up, commission, stay safe!



The delivery of a DENIOS hazardous materials store takes place as a heavy transport by low loader.



A crane is usually used to install a hazardous materials store outdoors.

A SYSTEM THAT GROWS TO MEET YOUR NEEDS.

CHANGES AND EXTENSIONS TO YOUR HAZARDOUS MATERIALS STORE.

With a DENIOS solution, you're in the best place. Right from the start, all with comprehensive support. Right from the planning and production stages, we take into account your requirements as well as current laws, standards and necessary certifications down to the smallest detail. If you need to make changes during operation or if you need to expand, we'll remain your first point of contact.

Do you need a comprehensive overview of all the electrical components in your hazardous materials store? Would you like to introduce an access control system via RFID scan instead of conventional keys? Do you want to rely on modern, automated leak detection and thus raise safety standards even further?

No problem: thanks to our expertise as a manufacturer and developer, we can recommend components that can be perfectly integrated into your existing system. We also take into account how any changes made need to be checked for legal compliance.

INTEGRATION INTO THE OVERALL SYSTEM.

From a technical point of view, new equipment is only effective if it is optimally integrated into the overall system. That's why DENIOS specialists check the static criteria of the hazardous materials store very carefully before making any changes, as well as the continued smooth operation of the electrics and control technology. This way, you're on the safe side.

EQUIPMENT OPTIONS.

Increase the comfort of your hazardous materials store with a extendable entrance canopy. Or optimise safety by installing an aerosol extinguishing system for which extinguishing water retention is not needed. There are hardly any limits to the range of equipment options. In a personal consultation on site, our experienced advisors can analyse your individual requirements with you and coordinate all the details.

An overview of additional equipment options can be found here [FROM P. 64.](#)



Practical, extendable canopy for the entrance area of a hazardous materials store for bad weather protection.



The aerosol extinguishing system is triggered by temperature and effectively interrupts the chemical combustion process within 4.5 - 15 seconds, depending on model.

SERVICE FOR REPAIRS AND SPARE PARTS.

When it comes to professional repairs and suitable spare parts, you'll benefit from our holistic range of services as a manufacturer of state-of-the-art hazardous materials stores: a repair is not just replacing a defective part with a new one. The focus is always on the coordinated interaction of all components of the overall system. Only an experienced service team from the manufacturer and developer can offer you this kind of quality. With DENIOS, you'll receive every service from a single source and thus ensure the ideal prerequisites for safe, reliable and legally compliant operation of your hazardous materials store.



Our service technicians are equipped with modern equipment to ensure repairs or replacement as quickly as possible.



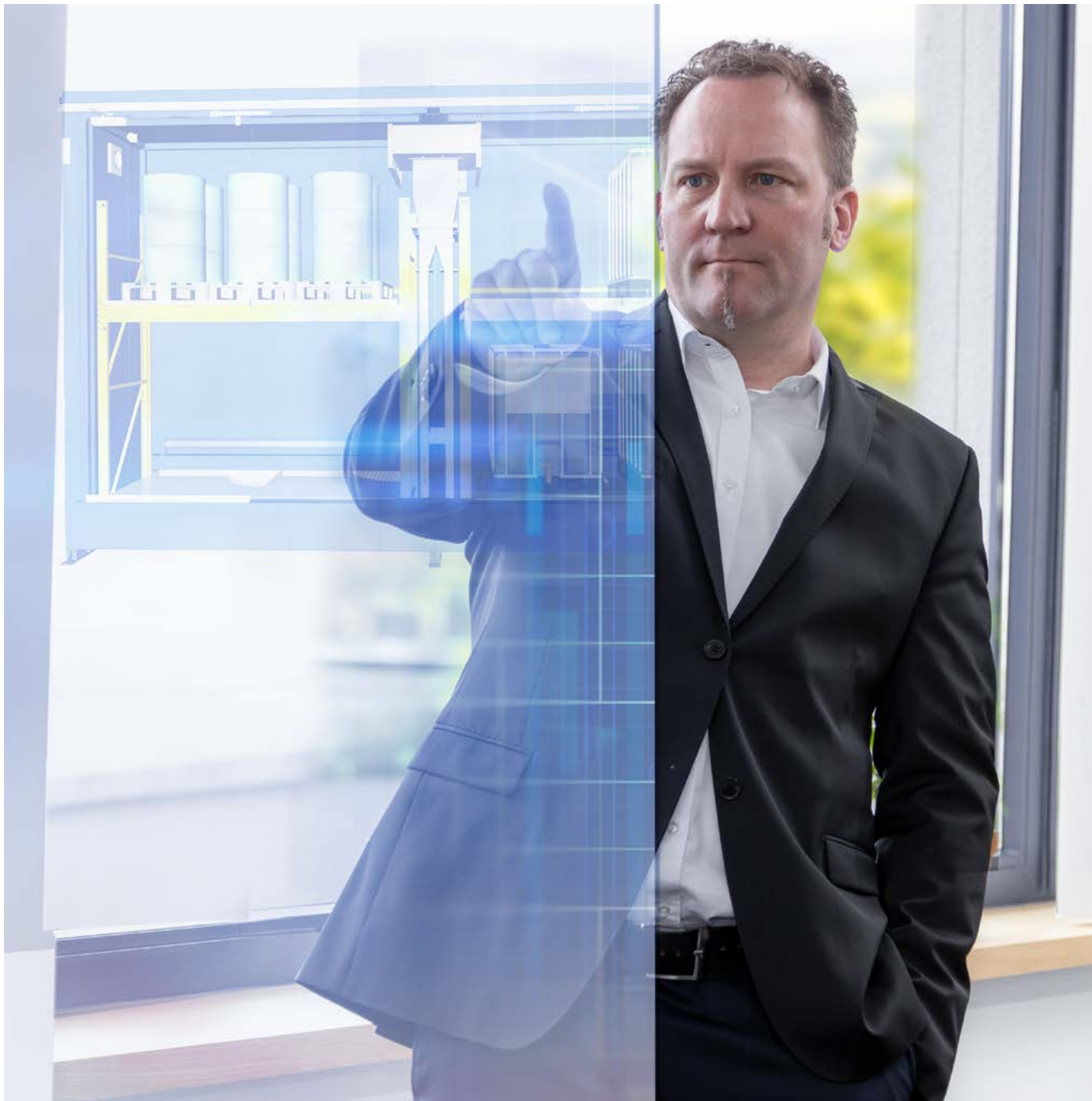


ADVICE FROM DENIOS. PROFESSIONAL AND INDIVIDUAL.

The storage of hazardous substances is subject to strict regulations. This makes it all the more important to have a competent partner at your side when planning and developing a hazardous materials store. Our experienced consultants are there for you at any time and can visit your company to carry out an in-depth analysis and offer advice. Contact us to arrange an appointment.

HAZARDOUS MATERIALS STORES. THE HOLISTIC VIEW.

DENIOS has been developing and producing safe and legally compliant hazardous materials storage technology for over 35 years. But that's not all. We always take a holistic and forward-looking view of your task. With individual advice, an understanding of local legislation, a wide range of products and qualified service, you'll receive a complete portfolio of services from a single source and can rely on a competent partner at your side throughout the entire product life cycle.





ALWAYS AT YOUR SIDE.

There's always a lot to consider with a hazardous materials store. That's why our experts are always there for you, providing personal, competent support and advice every step of the way.

Project request

You are welcome to make a project enquiry, without obligation, using **telephone number ☎ +49 5731 753 455 or email ✉ SALESBERATERES@DENIOS.DE**. We will get back to you as soon as possible.

Needs analysis and free, on-site advice

To ensure that the project runs smoothly without any surprises, it is important that our technical experts get a precise picture on site and analyse your individual requirements with you in detail.

Planning & Project management

Reliability in planning is important for both sides, which is why we'll give you a binding delivery date. For a project, a direct contact will coordinate the project and ensure adherence to deadlines.

Production

Whether standard or customised solution, thanks to state-of-the-art production and excellent quality management, you'll receive a wide range of high-quality products.

Transport, assembly & commissioning

Thought of every detail? Let us handle transport & installation. We'll check the conditions on site in advance so that everything runs smoothly on the day of commissioning.

Service & maintenance

After commissioning, you as the operator are responsible for the maintenance and proper condition of the system. We support you with our services to comply with your obligations.

▼ **Contact us for more information!**

PASSING ON KNOWLEDGE.

PRACTICAL INFORMATION AND TRAINING.



Shared knowledge is valuable and has a long-term value - for individuals and the common goal: how are hazardous substances moved and stored safely to protect people and the environment? The varied information available from DENIOS includes informative newsletters and practical guides to comprehensive reference books on the storage of hazardous substances. In our DENIOS Academy, you and your employees can also take part in practical training courses - at your premises or online as a webinar.

IN-HOUSE TRAINING COURSES.

- Personalised training on the topics of "environmental protection and work safety" at your company.

ONLINE TRAINING COURSES.

- In addition to classic in-house training courses and classroom events, you can also book all the essential training courses at the DENIOS Academy as online seminars.

OPEN TRAINING COURSES.

- Seminars and training for fire protection or safety officers: learn about important legislation and always stay up to date.

DISCOVER OUR DIGITAL SEMINAR OFFER NOW.

- High flexibility with regard to venue and time.
- No travel and accommodation costs.
- Certified courses and qualifications.
- Proof of training is provided by certificates of participation with VDSI points.

DENIOS.
ACADEMY

[WWW.DENIOS.DE/ACADEMY](https://www.denios.de/academy)

DENIOS HAZMAT MANUAL.

Your guide to safe hazardous material storage: this expert reference book provides valuable tips on working with and handling hazardous substances as well as an overview of current regulations and laws:

Environmental liability and environmental protection law, Immission protection law, Occupational health and safety law, Water law, Chemical law and Public building law.

[WWW.DENIOS.DE/FIBEL](http://www.denios.de/fibel)



DENIOS GUIDES.

Our practice-oriented guides provide answers to your questions, explained in an understandable and competent manner. Get expert tips on hazardous materials handling, work safety, explosion protection and many other areas of everyday operations.

[WWW.DENIOS.DE/MAGAZIN](http://www.denios.de/magazin)



THE DENIOS NEWSLETTER.

Subscribe to our newsletter and stay up to date: find out all about new offers, products and services. Benefit from tips, advice and the expertise of the DENIOS Academy.

[WWW.DENIOS.DE/NEWSLETTER](http://www.denios.de/newsletter)



PARTNERSHIP IS OUR MOTTO.

KEY ACCOUNTS AT DENIOS.

DENIOS Key Account Managers are there for you in person, wherever you are in the world and will work alongside you. As a client, you'll benefit from individual support and our expertise in local legislation. With a dense, international network of sales and production locations, you'll receive the products you need promptly and cost-efficiently.



Our e-procurement partners:



E-PROCUREMENT.

SAFE PURCHASING AT DENIOS.

With 15 years of experience in e-business, DENIOS AG is the professional partner for major customers. Or to put it another way: e-procurement comes as standard, in 14 languages, with more than 200 active electronic catalogues and over 14,000 items. As a developer and manufacturer, we offer the largest range in the field of safety-relevant business equipment and work safety. And we go one step further: everything is adapted to your individual requirements, country-specific and legally compliant. At the same time, as a major customer you'll benefit from framework agreements, confirmation of conditions, audit security and a purchasing advantage with exclusive conditions.

YOUR ADVANTAGES.

- With more than 14,000 items, the largest product range in the field of operational environmental protection, directly from the manufacturer.
- Product selection individually tailored to your needs.
- Over 15 years experience in e-business and over 200 catalogues in various formats.
- Available internationally, in 14 languages.
- Additional information available as a PDF download to help you use our products in compliance with the law.
- Standards such as BMEcat, eCI@ss, UNSPSC.
- EDI interfaces for fast document exchange.
- OCI interface for integration of the DENIOS online shop into your ERP system.

RECOMMENDED BY SAP ARIBA.

As an expert in e-business, we have been part of the Ariba Network for years. This digital marketplace with trading partners from 190 countries, does USD 3 trillion worth of business. DENIOS is the first company from the environmental technology sector to be recommended as a preferred supplier.

Discover what we can do. And feel free to contact us so you can benefit from our offering as a professional partner for environmental protection and work safety in Ariba.

Contact us for more information!

☎ TEL.: +49 5731 753 460

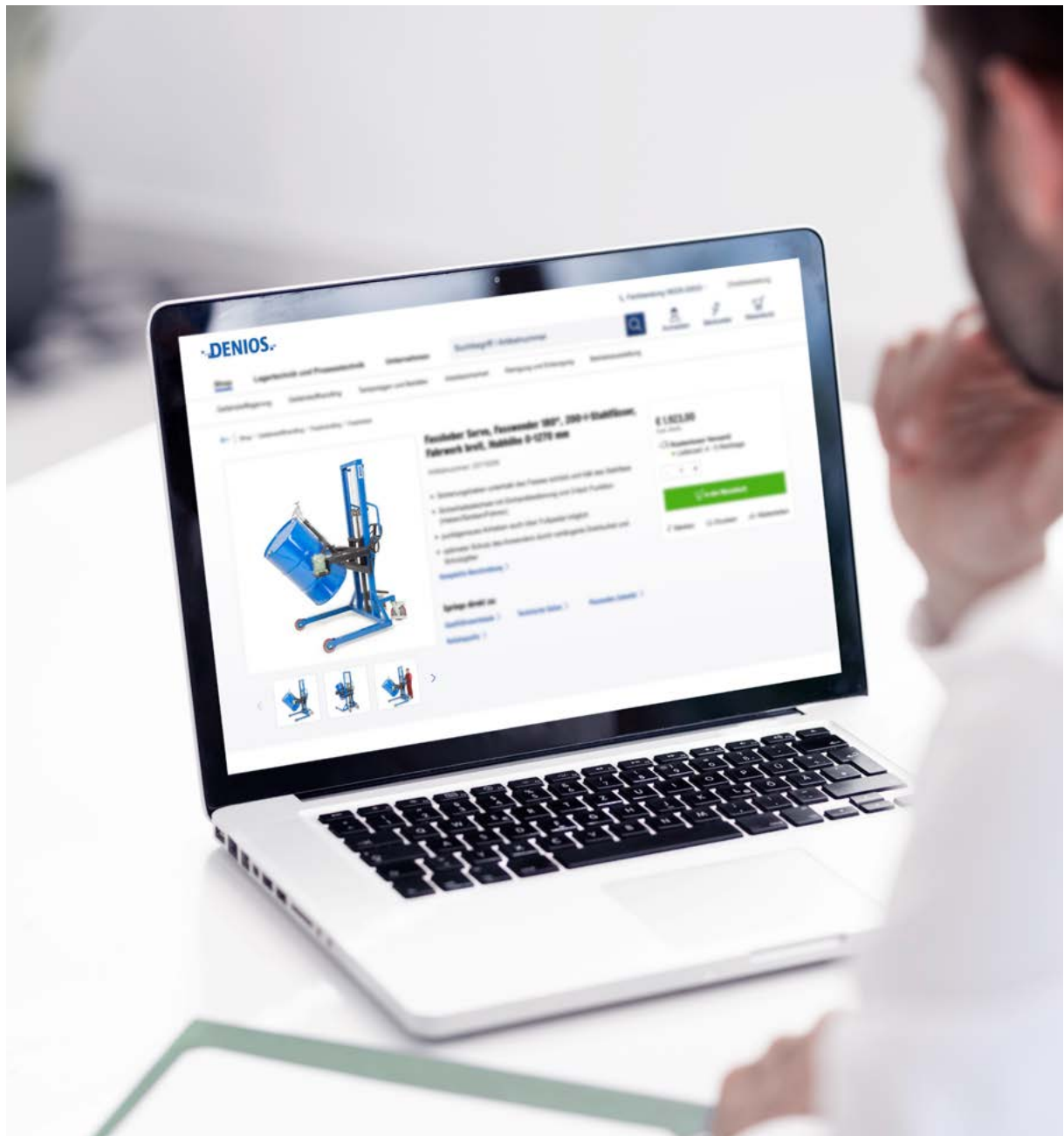
✉ EMAIL: KEYACCOUNT@DENIOS.DE



YOUR SHOP FOR HAZARDOUS SUBSTANCE SAFETY.

OVER 14,000 PRODUCTS CAN BE ORDERED DIRECTLY.

When it comes to hazardous materials safety, industries from all over the world rely on DENIOS products. Today, our range comprises more than 14,000 products. It all started with a simple but innovative product idea: the spill pallet. In over 35 years, we have developed numerous other innovations: you'll find a quality product in our product range for every daily task, for every application and for almost every conceivable requirement.



HAZARDOUS MATERIALS STORAGE.

- Spill pallets.
- Dispensing stations.
- Spillage decking.
- Hazardous substance storage and safety cabinets.



HANDLING HAZARDOUS MATERIALS.

- Absorbent materials.
- Leak management.
- Drum handling.
- Gas cylinder handling.



FUEL TANKS & TRANSPORT CONTAINERS.

- IBCs.
- Drums.
- Canisters.
- Safety containers.



CLEANING AND DISPOSAL.

- Parts cleaning and washing tables.
- Surface cleaning.
- ASF and ASP containers.
- Waste oil containers.



WORK SAFETY.

- Safety barriers and impact protection.
- Personal Protective Equipment.
- Emergency showers and eye wash stations.
- Workplace matting.



PRODUCTION AND OPERATION EQUIPMENT.

- Transport and storage containers.
- Shelving.
- Transport and lifting equipment.
- Equipment cabinets and lockers.



VISIT THE DENIOS ONLINE-SHOP NOW!



Get to know the entire DENIOS product range in our online shop and order directly. Thanks to extensive search functions, you can quickly find the right product to meet your requirements.

Take a look at our offers now! [WWW.DENIOS.DE](https://www.denios.de)

STAY IN TOUCH!

DENIOS AG
DEHMER STRASSE 54-66
32549 BAD OEYNHAUSEN

TEL. +49 5731 753 455
WWW.DENIOS.DE

